REF: 03-NCE-00556, 03-RF-00689; 00174-RF-03; DWF-031-03

Rocky Flats Environmental Technology Site

TYPE 1
RECONNAISSANCE LEVEL CHARACTERIZATION REPORT (RLCR)

AREA 5, GROUP 15 CLOSURE PROJECTS

(Buildings 120, 120A, 120B, 920, 920A and 920B)

REVISION 0

May 5, 2003

CLASSIFICATION REVIEW NOT REQUIRED PER EXEMPTION NUMBER CEX-005-02

1/70

ADMIN RECORD

TYPE 1
RECONNAISSANCE LEVEL CHARACTERIZATION REPORT (RLCR)

AREA 5, GROUP 15 CLOSURE PROJECTS

(Buildings 120, 120A, 120B, 920, 920A and 920B)

REVISION 0

May 5, 2003

Reviewed by: _____ Date: 5-7-03
Don Risoli, Quality Assurance

Reviewed by: _____ Date: 5-8-03
D.P. Snyder, RISS ESH&Q Manager

Approved by: _____ Date: 5/8/03
Karen Wiemelt, K-H D&D Project Manager

2

TABLE OF CONTENTS

ATTACHMENTS

3

ABBREVIATIONS/ACRONYMS

ACM	Asbestos containing material
Be	Beryllium
CDPHE	Colorado Department of Public Health and the Environment
CERCLA	Comprehensive Emergency Response, Compensation and Liability Act
$DCGL_{EMC}$	Derived Concentration Guideline Level – elevated measurement comparison
$DCGL_W$	Derived Concentration Guideline Level – Wilcoxon Rank Sum Test
D&D	Decontamination and Decommissioning
DDCP	Decontamination and Decommissioning Characterization Protocol
DOE	U.S. Department of Energy
DPP	Decommissioning Program Plan
DQA	Data quality assessment
DQOs	Data quality objectives
EPA	U.S. Environmental Protection Agency
FDPM	Facility Disposition Program Manual
HVAC	Heating, ventilation, air conditioning
HSAR	Historical Site Assessment Report
IHSS	Individual Hazardous Substance Site
IWCP	Integrated Work Control Package
K-H	Kaiser-Hill
LBP	Lead-based paint
LLW	Low-level waste
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
NORM	Naturally occurring radioactive material
NRA	Non-Rad-Added Verification
OSHA	Occupational Safety and Health Administration
PARCC	Precision, accuracy, representativeness, comparability and completeness
PCBs	Polychlorinated Biphenyls
PDS	Pre-demolition survey
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RFFO	Rocky Flats Field Office
RLC	Reconnaissance Level Characterization
RLCR	Reconnaissance Level Characterization Report
RSP	Radiological Safety Practices
SVOCs	Semi-volatile organic compounds
TCLP	Toxicity Characteristic Leaching Procedure
TSA	Total surface activity
VOCs	Volatile organic compounds

4

EXECUTIVE SUMMARY

A Reconnaissance Level Characterization (RLC) was performed to enable facility "Typing" per the DPP (10/8/98) and compliant disposition and waste management of the Area 5, Group 15 facilities (i.e., Buildings 120, 120A, 120B, 920, 920A and 920B). Because these facilities were anticipated Type 1 facilities, the characterization was performed in accordance with the Pre-Demolition Survey Plan (MAN-127-PDSP). All facility surfaces were characterized in this RLC, including the interior and exterior surfaces [i.e., floors (slabs), walls, ceilings and roofs]. Environmental media beneath and surrounding the facilities were not within the scope of this RLCR and will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA.

The RLC encompassed both radiological and chemical characterization to enable compliant disposition and waste management pursuant to the D&D Characterization Protocol (MAN-077-DDCP). The characterization built upon physical, chemical and radiological hazards identified in the facility-specific Historical Site Assessment Report.

Results indicate that no radiological contamination exists in excess of the PDSP unrestricted release limits of DOE Order 5400.5. No building materials suspected of containing asbestos were identified. All beryllium sample results were less than 0.1 $\mu g/100cm^2$. Fluorescent light ballasts may contain PCBs. Any PCB ballasts and hazardous-waste items will be removed and disposed of in compliance with Environmental Protection Agency (EPA) and Colorado Department of Public Health and Environment (CDPHE) regulations. All demolition debris will be managed in compliance with regulations governing PCBs (40 CFR 761), and Environmental Compliance Guidance #27, *Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal,* as applicable. All concrete associated with these facilities meet the criteria for recycling concrete per the RFCA RSOP for Recycling Concrete.

Based upon this RLCR, the Area 5, Group 15 facilities are considered Type 1 facilities. To ensure the facilities remain free of contamination and RLC data remain valid, Level 2 Isolation Controls have been established and the facilities posted accordingly.

1 INTRODUCTION

A Reconnaissance Level Characterization (RLC) was performed to enable compliant disposition and waste management of Area 5, Group 15 facilities (i.e., Buildings 120, 120A, 120B, 920, 920A and 920B). Because these facilities were anticipated Type 1 facilities, a PDS characterization was performed. All facility surfaces were characterized in this RLC, including the interior and exterior surfaces of the facilities [i.e., floors (slabs), walls, ceilings and roofs]. Environmental media beneath and surrounding the facilities were not within the scope of this RLC Report (RLCR) and will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA.

As part of the Rocky Flats Environmental Technology Site (RFETS) Closure Project, numerous facilities will be removed. Among these are the Area 5, Group 15 facilities. The locations of these facilities are shown in Attachment A, *Facility Location Map*. These facilities no longer support the RFETS mission and will be removed to reduce Site infrastructure, risks and/or operating costs.

Before the facilities can be removed, a Pre-Demolition Survey (PDS) must be conducted; this document presents the PDS results. The PDS was conducted pursuant to the Decontamination and Decommissioning Characterization Protocol (MAN-077-DDCP) and the Pre-Demolition Survey Plan for D&D Facilities (MAN-127-PDSP). The PDS built upon physical, chemical and radiological hazards identified in the facility-specific Historical Site Assessment Report.

1.1 Purpose

The purpose of this report is to communicate and document the results of the RLC effort. An RLC is performed before Type 1 building demolition to define the pre-demolition radiological and chemical conditions of a facility. Pre-demolition conditions are compared with the release limits for radiological and non-radiological contaminants. RLC results will enable project personnel to make final disposition decisions, develop related worker health and safety controls, and estimate waste volumes by waste types.

1.2 Scope

This report presents the pre-demolition radiological and chemical conditions of the Area 5, Group 15 facilities. Environmental media beneath and surrounding the facilities are not within the scope of this RLCR and will be addressed using the Soil Disturbance Permit process and in compliance with RFCA.

1.3 Data Quality Objectives

The Data Quality Objectives (DQOs) used in designing this RLC were the same DQOs identified in the Pre-Demolition survey Plan for D&D Facilities (MAN-127-PDSP.) Refer to section 2.0 of MAN-127-PDSP for these DQOs.

6

2 HISTORICAL SITE ASSESSMENT

Facility-specific Historical Site Assessments (HSAs) were conducted to understand facility histories and related hazards. The assessments consisted of facility walk-downs, interviews, and document review, including review of the Historical Release Report (refer to the D&D Characterization Protocol, MAN-077-DDCP). Results were used to identify data gaps and needs, and to develop radiological and chemical characterization packages. Results of the facility-specific HSAs were documented in a facility-specific *Historical Site Assessment Report (HSAR) for Area 5, Group 15 facilities*, dated December, 2002, Revision 0 (refer to Attachment B). In summary, the HSAR identified no potential for radiological and chemical hazards, except the potential for asbestos containing materials and PCBs in paint and light ballasts.

3 RADIOLOGICAL CHARACTERIZATION AND HAZARDS

The Area 5, Group 15 facilities were characterized for radiological hazards per the PDSP. Radiological characterization was performed to define the nature and extent of radioactive materials that may be present on the facility surfaces. Measurements were performed to evaluate the contaminants of concern. Based upon a review of historical and process knowledge, building walk-downs, and MARSSIM guidance, a Radiological Characterization Plan was developed during the planning phase that describes the minimum survey requirements (refer to the RISS Characterization Project files).

Six radiological survey packages were developed for the interior and exterior surfaces of the Area 5, Group 15 facilities: 120-5-001 (Building 120 interior), 120A-5-002 (Building 120A interior), 120B-5-003 (Building 120B interior), 920-5-004 (Building 920 interior and exterior), 920A-5-005 (Building 920A interior and exterior) and 920B-5-006 (Building 920B interior and exterior). The six survey packages were developed in accordance with Radiological Safety Practices (RSP) 16.01, *Radiological Survey/Sampling Package Design, Preparation, Control, Implementation and Closure.* Total surface activity (TSA), removable surface activity (RSA), and scan measurements were collected in accordance with RSP 16.02 *Radiological Surveys of Surfaces and Structures*. Radiological survey data were verified, validated and evaluated in accordance with RSP 16.04, *Radiological Survey/Sample Data Analysis*. Quality control measures were implemented relative to the survey process in accordance with RSP 16.05, *Radiological Survey/Sample Quality Control*. Radiological survey data, statistical analysis results, and survey locations are presented in Attachment C, *Radiological Data Summary and Survey Maps*. The radiological survey unit packages are maintained in the RISS Characterization Project files.

7

One hundred and fifty-six (156) TSA measurements (90 random, 24 biased, 30 equipment and 12 QC), one hundred and forty-four (144) RSA measurements (90 random, 24 biased, and 30 equipment), and a minimum of 5% of the interior and exterior surfaces of the three Area 5, Group 15 facilities were scanned at biased locations. The RLC data confirmed that these facilities do not contain radiological contamination above the surface contamination guidelines provided in the PDSP. Radiological survey data, statistical analysis results, and survey locations are presented in Attachment C, *Radiological Data Summary and Survey Maps*. The radiological survey unit packages are maintained in the RISS Characterization Project files. Level 2 Isolation Control postings are displayed on the buildings to ensure no radioactive materials are inadvertently introduced.

The exterior radiological surveys for the Area 5, Group 15 facilities (Buildings 120, 120A and 120B) were performed as part of the RISS West Side Exterior PDS strategy effort (authorized by Department of Energy letter, *02-DOE-01598*, dated December 13th, 2002 and approved by CDPHE letter, *RE: Proposed Deviations From The Pre-Demolition Survey Plan (PDSP)*, dated January 27, 2003; refer to the RISS Characterization Project Files for letter copies). The RISS West Side exterior building radiological surveys and locations can be found in survey unit package EXT-B-001, *RISS West Side Building Exteriors*. Four (4) biased TSA measurements, four (4) biased RSA measurements, and a one (1) square meter scan at each of the four (4) TSA/RSA locations were performed at biased locations on the exterior surfaces of Buildings 120, 120A and 120B. Ten percent scan surveys were performed at biased locations on the exterior entrance and associated concrete surfaces of the Buildings 120, 120A and 120B, and two (2) additional TSA and RSA measurements were collected also. The RLC data collected in exterior survey unit package EXT-B-001 confirmed that the exterior surfaces of these facilities do not contain radiological contamination above the surface contamination guidelines provided in the PDSP. Radiological survey data, statistical analysis results, and survey map locations for the West-Side Exterior survey unit package EXT-B-001 are maintained in the RISS Characterization Project files.

4 CHEMICAL CHARACTERIZATION AND HAZARDS

The Area 5, Group 15 facilities were characterized for chemical hazards per the PDSP. Chemical characterization was performed to determine the nature and extent of chemical contamination that may be present on, or in the facilities. Based upon a review of historical and process knowledge, visual inspections, and PDSP DQOs, additional sampling needs were determined. A Chemical Characterization Plan (refer to RISS Characterization Project files) was developed during the planning phase that describes sampling requirements and the justification for the sample locations and estimated sample numbers. Contaminants of concern included asbestos, beryllium, RCRA/CERCLA constituents, and PCBs. Refer to Attachment D, *Chemical Data Summaries and Sample Maps*, for details on sample results and sample locations.

8

4.1 Asbestos

A visual survey of building materials suspected of containing asbestos was conducted in the aforementioned buildings in accordance with the PDSP. A CDPHE-certified asbestos inspector conducted the inspection and sampling in accordance with the *Asbestos Characterization Protocol, PRO-563-ACPR, Revision 1.* No building materials suspected of containing asbestos were identified for sampling as part of this RLC effort.

4.2 Beryllium (Be)

Based on the HSAR and personnel interviews, these buildings were anticipated Type 1 facilities. There was not, however, adequate historical and process knowledge to conclude that beryllium was not used or stored in these buildings. Therefore, biased beryllium sampling was performed in accordance with the PDSP and the *Beryllium Characterization Procedure, PRO-536-BCPR, Revision 0, September 9, 1999.* Biased sample locations corresponded with the most probable areas of dust accumulation (including beryllium dust), assuming airborne deposition.

All beryllium smear sample results were less than 0.1 $\mu g/100cm^2$. Beryllium laboratory sample data and location maps are contained in Attachment D, *Chemical Data Summaries and Sample Maps.*

4.3 RCRA/CERCLA Constituents [including metals and volatile organic compounds (VOCs)]

Based on the HSAR, interviews and facility walk-downs of the Area 5, Group 15 facilities, there was no record of operations using materials that could lead to RCRA/CERCLA concerns. None of the buildings has a history of spills or releases of RCRA/CERCLA regulated materials, and there were no observations to suggest contamination. Therefore, RCRA/CERCLA constituent sampling was not performed in these facilities as part of this RLC effort.

Sampling for lead in paint in the Area 5, Group 15 facilities were not performed. Environmental Waste Compliance Guidance #27, *Lead-based Paint (LBP) and Lead-based paint Debris Disposal*, states that LBP debris generated outside of currently identified high contamination areas shall be managed as non-hazardous (solid) wastes, and additional analysis for characteristics of hazardous waste derived from LBP is not a requirement for disposal.

The buildings may contain some RCRA regulated items, such as mercury thermostats, fluorescent light bulbs, mercury vapor light bulbs, mercury containing gauges, circuit boards, leaded glass and lead-acid batteries. These items will be removed prior to demolition and managed in accordance with the Colorado Hazardous Waste Act.

9

4.4 Polychlorinated Biphenyls (PCBs)

Based on the HSAR, interviews and facility walkdowns of the Area 5, Group 15 facilities, no PCB-containing equipment were ever present in any of the facilities, making the potential for PCB contamination resulting from spills highly unlikely. Therefore, PCB sampling was not performed in these facilities as part of this RLC effort.

Based on the age of the Area 5, Group 15 facilities (constructed after 1980), paints used on the facility are not expected to contain PCBs, and painted surfaces can be disposed of as sanitary waste.

Although it is unlikely, some of the facilities may contain fluorescent light ballasts containing PCBs. Fluorescent light fixtures will be inspected to identify PCB ballasts during removal operations. PCB ballasts will be identified based on factors such as labeling (e.g., PCB-containing and non PCB-containing), manufacturer, and date of manufacturing. All ballasts that do not indicate non PCB-containing are assumed to be PCB-containing and, if not leaking or more than 9 pounds, will remain with the building and be disposed of as PCB Bulk Product Waste.

5 PHYSICAL HAZARDS

Physical hazards associated with the Area 5, Group 15 facilities consist of those common to standard industrial environments and include hazards associated with energized systems, utilities, and trips and falls. There are no unique hazards associated with the facilities. The facilities have been relatively well maintained and are in good physical condition, and therefore, do not present hazards associated with building deterioration. Physical hazards are controlled by the Site Occupational Safety and Industrial Hygiene Program, which is based on OSHA regulations, DOE orders, and standard industry practices.

6 DATA QUALITY ASSESSMENT

Data used in making management decisions for decommissioning of the Area 5, Group 15 facilities, and consequent waste management, are of adequate quality to support the decisions documented in this report. The data presented in this report (Attachments C and D) were verified and validated relative to DOE quality requirements, applicable EPA guidance, and original DQOs of the project.

In summary, the Verification and Validation (V&V) process corroborates that the following elements of the characterization process are adequate:

- the *number* of samples and surveys;
- the *types* of samples and surveys;
- the sampling/survey process as implemented "in the field"; and,
- the laboratory analytical process, relative to accuracy and precision considerations.

Details of the DQA are provided in Attachment E.

7 DECOMMISSIONING WASTE TYPES AND VOLUME ESTIMATES

The demolition and disposal of the Area 5, Group 15 facilities will generate a variety of wastes. Estimated waste types and waste volumes are presented below by facility. All waste can be disposed of as sanitary waste, PCB Bulk Product Waste, or hazardous-waste items (e.g., mercury thermostats, fluorescent light bulbs, mercury vapor light bulbs, mercury containing gauges, circuit boards, leaded glass and lead-acid batteries). There is no radioactive or beryllium waste. Leaking PCB ballasts, and hazardous waste items will be removed prior to demolition and disposed of pursuant to Site waste management procedures. All concrete associated with these facilities meet the criteria for recycling concrete per the RFCA RSOP for Recycling Concrete.

Waste Volume Estimates and Material Types - Area 5, Group 15

Facility	Concrete (cu ft)	Wood (cu ft)	Metal (cu ft)	Corrugated Sheet Metal (cu ft)	Wall Board (cu ft)	ACM (cu ft)	Other Waste (cu ft)
120	700	0	200	300	0	0	None
120A	0	300	0	0	50	0	None
120B	400	0	600	0	0	0	None
920	700	0	200	300	0	0	None
920A	0	300	0	0	50	0	None
920B	400	0	600	0	0	0	None

8 FACILITY CLASSIFICATION AND CONCLUSIONS

Based on the analysis of radiological, chemical and physical hazards, the Area 5, Group 15 facilities (i.e., Buildings 120, 120A, 120B, 920, 920A and 920B) are classified as RFCA Type 1 facilities pursuant to the RFETS Decommissioning Program Plan (DPP; K-H, 1999) and can be demolished or sold to offsite commerce. The Type 1 classification is based on a review of historical and process knowledge, and newly acquired RLC data.

11

The RLC of the Area 5, Group 15 facilities was performed in accordance with the DDCP and PDSP. All PDSP DQOs were met, and all data satisfied the PDSP DQA criteria. These facilities do not contain radiological or beryllium wastes. Any PCB ballasts or hazardous-waste items will be managed and disposed of in compliance with Environmental Protection Agency (EPA) and Colorado Department of Public Health and Environment (CDPHE) regulations. All demolition debris will be managed in compliance with regulations governing PCBs (40 CFR 761), and Environmental Compliance Guidance #27, *Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal,* as applicable.

All concrete associated with these facilities meet the criteria for recycling concrete per the RFCA RSOP for Recycling Concrete. Environmental media beneath and surrounding the facilities will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA.

To ensure that the Type 1 facilities remain free of contamination and RLC data remain valid, Level 2 Isolation Controls have been established and the facilities posted accordingly.

12

9 REFERENCES

DOE/RFFO, CDPHE, EPA, 1996. *Rocky Flats Cleanup Agreement (RFCA),* July 19, 1996.

DOE Order 5400.5, *"Radiation Protection of the Public and the Environment."*

EPA, 1994. *"The Data Quality Objective Process,"* EPA QA/G-4.

K-H, 1999. *Decommissioning Program Plan*, June 21, 1999.

MAN-131-QAPM, *Kaiser-Hill Team Quality Assurance Program*, Rev. 1, November 1, 2001.

MAN-076-FDPM, *Facility Disposition Program Manual*, Rev. 3, January 1, 2002.

MAN-077-DDCP, *Decontamination and Decommissioning Characterization Protocol*, Rev. 3, July 15, 2002.

MAN-127-PDSP, *Pre-Demolition Survey Plan for D&D Facilities*, Rev. 1, July 15, 2002.

MARSSIM - *Multi-Agency Radiation Survey and Site Investigation Manual*, December 1997 (NUREG-1575, EPA 402-R-97-016).

PRO-475-RSP-16.01, *Radiological Survey/Sampling Package Design, Preparation, Control, Implementation, and Closure,* Rev. 1, May 22, 2001.

PRO-476-RSP-16.02, *Pre-Demolition (Final Status) Radiological Surveys of Surfaces and Structures*, Rev. 1, May 22, 2001.

PRO-477-RSP-16.03, *Radiological Samples of Building Media*, Rev. 1, May 22, 2001.

PRO-478-RSP-16.04, *Radiological Survey/Sample Data Analysis for Final Status Survey*, Rev. 1, May 22, 2001.

PRO-479-RSP-16.05, *Radiological Survey/Sample Quality Control for Final Status Survey*, Rev. 1, May 22, 2001.

PRO-563-ACPR, *Asbestos Characterization Procedure,* Revision 0, August 24, 1999.

PRO-536-BCPR, *Beryllium Characterization Procedure*, Revision 0, August 24, 1999.

RFETS, *Environmental Waste Compliance Guidance #25, Management of Polychlorinated Biphenyls (PCBs) in Paint and Other Bulk Product Waste During Facility Disposition.*

RFETS, *Environmental Waste Compliance Guidance #27, Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal.*

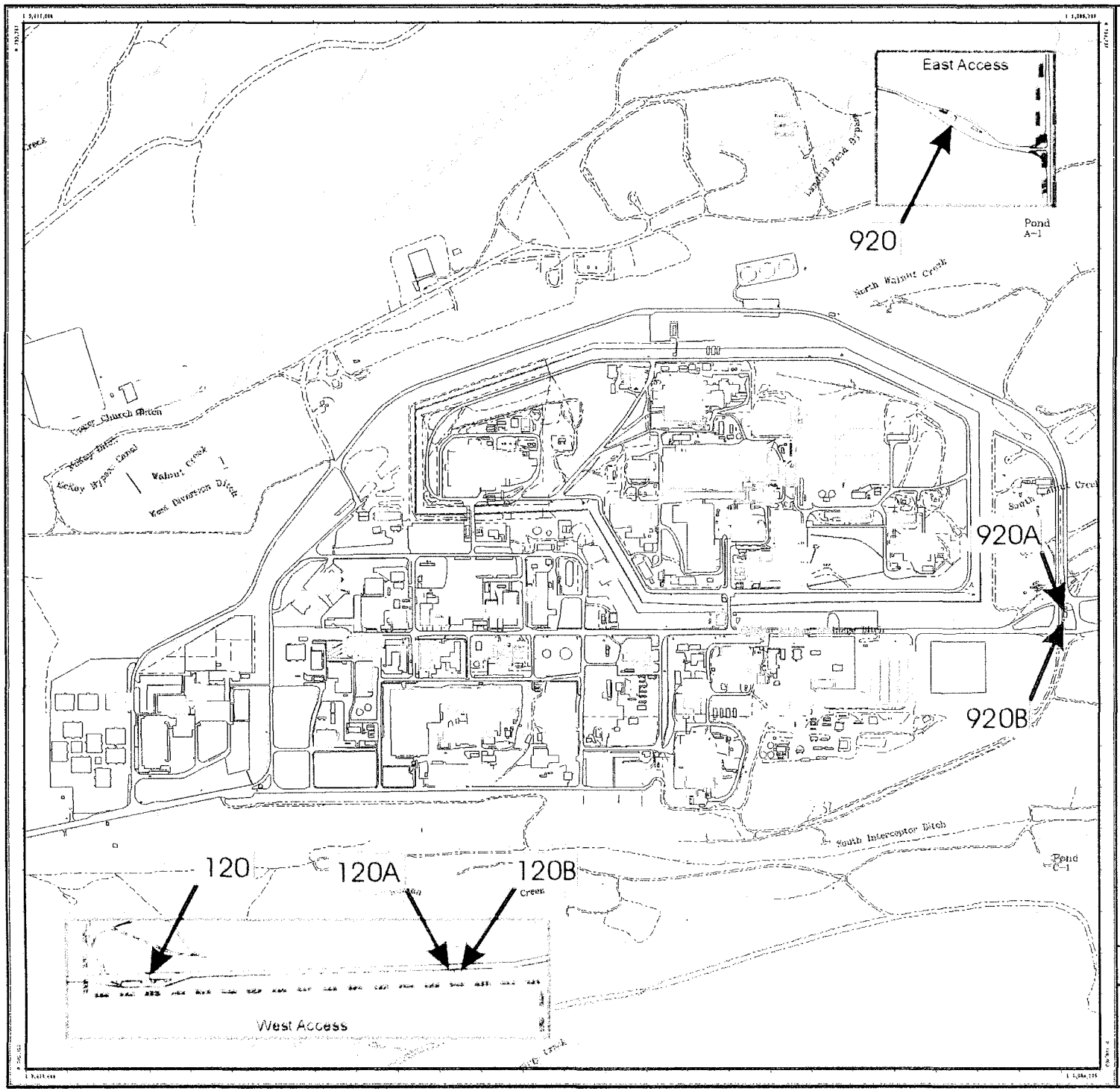
RFCA Standard Operation Protocol for Recycling Concrete, September 28, 1999.

Historical Site Assessment Report for the Area 5, Group 15 Facilities, dated December, 2002, Revision 0.

ATTACHMENT A

Facility Location Map

Best Available Copy



Building Location fo Buildings 120, 120A, 120B, 920, 920A & 920B

Standard Map Features

- Buildings and other structures
- Demolished buildings and other structures
- Lakes and ponds
- *Streams, ditches, or other* drainage features
- Fences and other barriers
- Paved roads
- Dirt roads

DATA SOURCE BASE FEATURES:
Buildings, fences, hydrography, roads and other structures from 1994 aerial fly-over data captured by EG&G RSL, Las Vegas.
Digitized from the orthophotographs. 1/95

N

Scale = 1 : 12450
1 inch represents approximately 1038 feet

250 0 500 1000ft

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

GIS Dept 303-966-7707

Prepared by: CH2MHILL

Prepared for: KAISER-HILL COMPANY

MAP ID: FY 2003

May 1, 2003

H:_Svr w\projects\03-0188\120.cdr

ATTACHMENT B

Historical Site Assessment Report

D&D RISS Facility Characterization
Historical Site Assessment Report
December, 2002 Rev. 0

Facility ID: (AREA 5 GROUP 15) Buildings 120, 120A, 120B, 920, 920A, 920B.
Anticipated Facility Type (1, 2, or 3): All buildings are anticipated Type 1 facilities.

This facility-specific Historical Site Assessment (HSA) has been performed in accordance with:
D&D Characterization Protocol, RFETS MAN-077-DDCP, latest version, and
Facility Disposition Program Manual, RFETS MAN-076-FDPM, latest version

Physical Description

Buildings 120 and 920

Buildings 120 and 920 are each 560 square-foot Guard Posts and were constructed in 1986. Building 120 is the West Access Portal and 920 is the East Access Portal. These buildings have concrete walls and a concrete foundation, and an insulated metal roof. There is a floor drain in the lavatory. These buildings are connected to the vehicle access gates and control the electronic vehicle monitoring equipment. The buildings are equipped with external emergency diesel generators, including a diesel fuel tank.

Buildings 120 and 920 have the following utilities: electricity, potable water, and sanitary drains.

Buildings 120A and 920A

Buildings 120A and 920A are each 120 square-foot portable SPO Shelters and were purchased in the late 1990s. These shelters are located at the east and west Vehicle Search Facilities. They are 10' x 10' wooden, skid-mounted sheds with metal roofs. Interior walls are constructed of wallboard, the floors are vinyl tile, and they have surface mounted light fixtures.

Buildings 120A and 920A have the following utilities: electricity.

Buildings 120B and 920B

Buildings 120B and 920B are each 1,008 square-foot Vehicle Search Facilities constructed in 2002. These buildings are located on the east and west access roads. They are 20' x 40' insulated metal structures built on a concrete pad. There are no floor drains.

Buildings 120B and 920B have the following utilities: electricity.

17

Historical Operations

Buildings 120 and 920

Buildings 120 and 920 are the east and west site access facilities. These buildings support the east and west access gates and act as general office and break room for the site security personnel. There is no history of any radiological or hazardous operations.

Buildings 120A and 920A

Buildings 120A and 920A are portable shelters used as a general office and break room for site security personnel located at the east and west Vehicle Search Facilities. There is no history of any radiological or hazardous operations.

Buildings 120B and 920B

Buildings 120B and 920B have been used as covered vehicle search facilities. They are open garages with vehicle doors on both sides to allow for rapid entrance and egress of employee vehicles during random searches. There is no history of any radiological or hazardous operations.

Current Operational Status

Buildings 120, 120A, 120B, 920, 920A, and 920B are all operational.

Contaminants of Concern

Asbestos

Describe any potential, likely, or known sources of Asbestos:

None of the facilities addressed in this HSA have an asbestos posting.

Beryllium (Be)

Describe any potential, likely, or known Be production or storage locations:

None of the facilities addressed in this HSA are on the RFETS list of Historic and Present Beryllium Areas.

Summarize any recent Be sampling results:

None.

Lead

Describe any potential, likely, or known sources of Lead (e.g., paint, shielding, etc.):

Based on the age of the facilities addressed in this HSA, lead in paint should not be a concern. No processes containing lead were conducted in these facilities.

18

RCRA/CERCLA Constituents

Describe any potential, likely, or known sources of RCRA/CERCLA constituents (e.g., chemical storage, waste storage, and processes):

None of the buildings addressed in this HSA have a history of hazardous operations.

Describe any potential, likely, or known spill locations (and sources, if any):

Minor automotive oil stains on concrete floor.

Describe methods in which spills were mitigated, if any:

Spills were cleaned by sweeping, washing, or wiping.

PCBs

Describe any potential, likely, or known sources of PCBs (e.g., light ballasts, paints, equipment, etc.):

No PCB containing process where housed in any of the facilities addressed in this HSA. No process equipment containing PCBs were located in any of these facilities. Based on the age of construction of these facilities, PCBs in paint should not be a concern.

Describe any potential, likely, or known spill locations (and sources, if any):

No PCB spills occurred in any of the facilities addressed in this HSA.

Describe methods in which spills were mitigated, if any:

No PCB spills occurred in any of the facilities addressed in this HSA.

19

Radiological Contaminants

Describe any potential, likely, or known radiological production or storage locations:

None of the facilities addressed in this HSA have a history of radiological operations.

Describe any potential, likely, or known spill locations (e.g., known leaking sealed radioactive sources, leaking waste drums, potentially contaminated drains, etc.):

None

Describe methods in which spills were mitigated, f any:

None

Describe any potential, likely, or known isotopes of concern (e.g., weapons grade plutonium, uranium isotopes, pure beta emitters, mixed fission products, etc.):

None

Describe any potential, likely, or known external facility contamination (e.g., stack release points, unfiltered ventilation, facility's physical location to known site releases, etc.):

None

Environmental Restoration Concerns

Describe any ER concerns that could affect facility characterization (e.g., IHSSs, PACs, UBCs):

The facilities described in this HSA were not associated with any IHSSs, PACs, or UBCs.

Additional Information

Describe any additional information that may be useful during facility characterization (e.g., contaminant migration routes, waste handling operations, physical hazards, Historical Release Reports, WSRIC data, etc.):

None

References

Provide all sources of information utilized to gather data for facility history (e.g., documents, files, interviews):

Sources reviewed to complete this HSA were the RFETS Facility List, the Historical Release Report, Site Master List of RCRA Units, and the Site IHSS, PAC, and UBC databases. In addition, a facility walkdown and interviews were performed.

20

Waste Volume Estimates and Material Types							
Facility	Concrete (cu ft)	Wood (cu ft)	Metal (cu ft)	Corrugated Sheet Metal (cu ft)	Wall Board (cu ft)	ACM (cu ft)	Other Waste (cu ft)
B120	700	0	200	300	0	TBD	N/A
B920	700	0	200	300	0	TBD	N/A
B120A	0	300	0	0	50	TBD	N/A
B920A	0	300	0	0	50	TBD	N/A
B120B	400	0	600	0	0	TBD	N/A
B920B	400	0	600	0	0	TBD	N/A

Further Actions

Recommend any further actions, if any (e.g., characterization, decontamination, special handling, etc.):

Begin the RLC process.

Note:

This HSA was performed prior to SME walkdowns, and chemical and radiological characterization package preparations. SMEs should evaluate and/or verify all information during the RLC/PDS process. SMEs may need to review additional documentation and perform additional interviews. Information contained in this HSA only represents a "snapshot" in time. Subsequent data may be obtained during SME walkdowns and chemical and radiological characterization package preparations, which may conflict with this report. However, this report will not be amended, and the newer data will take precedence over the data in this report. Newer data will appear in the RLC Report.

Prepared By: Jack Strandquist / /s/ / 16 December 2002

Name Signature Date

21

ATTACHMENT C

Radiological Data Summaries and Survey Maps

SURVEY UNIT 120-5-001
RADIOLOGICAL DATA SUMMARY - PDS

Survey Unit Description: B120 (Interior)

23

Total Surface Activity Measurements

	25 Number Required	25 Number Obtained	
MIN	-9.1		dpm/100 cm^2
MAX	40.5		dpm/100 cm^2
MEAN	9.1		dpm/100 cm^2
STD DEV	12.7		dpm/100 cm^2
TRANSURANIC DCGL$_W$	100		dpm/100 cm^2

Removable Activity Measurements

	25 Number Required	25 Number Obtained	
MIN	-0.3		dpm/100 cm^2
MAX	2.7		dpm/100 cm^2
MEAN	0.2		dpm/100 cm^2
STD DEV	0.9		dpm/100 cm^2
TRANSURANIC DCGL$_W$	20		dpm/100 cm^2

24

SURVEY UNIT 120-5-001
TSA - DATA SUMMARY

Manufacturer:	NE Tech	NE Tech
Model:	DP-6	DP-6
Instrument ID#:	2	3
Serial #:	665	665
Cal Due Date:	8/19/03	8/19/03
Analysis Date:	3/10/03	3/11/03
Alpha Eff. (c/d):	0.216	0.216
Alpha Bkgd (cpm)	2.7	2.0
Sample Time (min)	1.5	1.5
LAB Time (min)	1.5	1.5
MDC (dpm/100cm^2)	48.0	48.0

Sample Location Number	Instrument ID#:	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm2)	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm2)	Sample Net Activity (dpm/100cm2)[1,2]
1	3	6.7	31.0	2.0	9.3	15.9
2	3	3.3	15.3	2.0	9.3	0.2
3	3	6.0	27.8	2.0	9.3	12.7
4	3	3.3	15.3	2.0	9.3	0.2
5	3	6.7	31.0	4.7	21.8	15.9
6	2	7.3	33.8	5.3	24.5	18.7
7	3	12.0	55.6	4.0	18.5	40.5
8	3	1.3	6.0	2.0	9.3	-9.1
9	2	4.0	18.5	3.3	15.3	3.4
10	3	4.0	18.5	2.0	9.3	3.4
11	3	8.0	37.0	2.7	12.5	22.0
12	2	6.0	27.8	0.7	3.2	12.7
13	3	2.0	9.3	2.7	12.5	-5.8
14	3	1.3	6.0	4.7	21.8	-9.1
15	2	4.0	18.5	2.7	12.5	3.4
16	3	5.3	24.5	4.0	18.5	9.5
17	3	4.0	18.5	4.7	21.8	3.4
18	3	8.0	37.0	3.3	15.3	22.0
19	2	4.7	21.8	5.3	24.5	6.7
20	2	2.0	9.3	6.0	27.8	-5.8
21	2	9.3	43.1	4.0	18.5	28.0
22	3	9.3	43.1	3.3	15.3	28.0
23	2	3.3	15.3	2.7	12.5	0.2
24	3	2.7	12.5	2.0	9.3	-2.6
25	3	6.0	27.8	3.3	15.3	12.7

1 - Average LAB used to subtract from Gross Sample Activity

15.1	Sample LAB Average
MIN	-9.1
MAX	40.5
MEAN	9.1
SD	12.7
Transuranic DCGL$_W$	**100**

QC Measurements

7 QC	2	8.0	37.0	3.3	15.3	23.1
22 QC	2	6.0	27.8	2.7	12.5	13.9

1 - Average QC LAB used to subtract from Gross Sample Activity

13.9	QC LAB Average
MIN	13.9
MAX	23.1
MEAN	18.5
Transuranic DCGL$_W$	***100***

25

SURVEY UNIT 120-5-001
RSC - DATA SUMMARY

Manufacturer:	Eberline
Model:	SAC-4
Instrument ID#:	1
Serial #:	767
Cal Due Date:	5/13/03
Analysis Date:	3/11/03
Alpha Eff. (c/d):	0.33
Alpha Bkgd (cpm)	0.1
Sample Time (min)	2
Bkgd Time (min)	10
MDC (dpm/100cm^2)	9.0

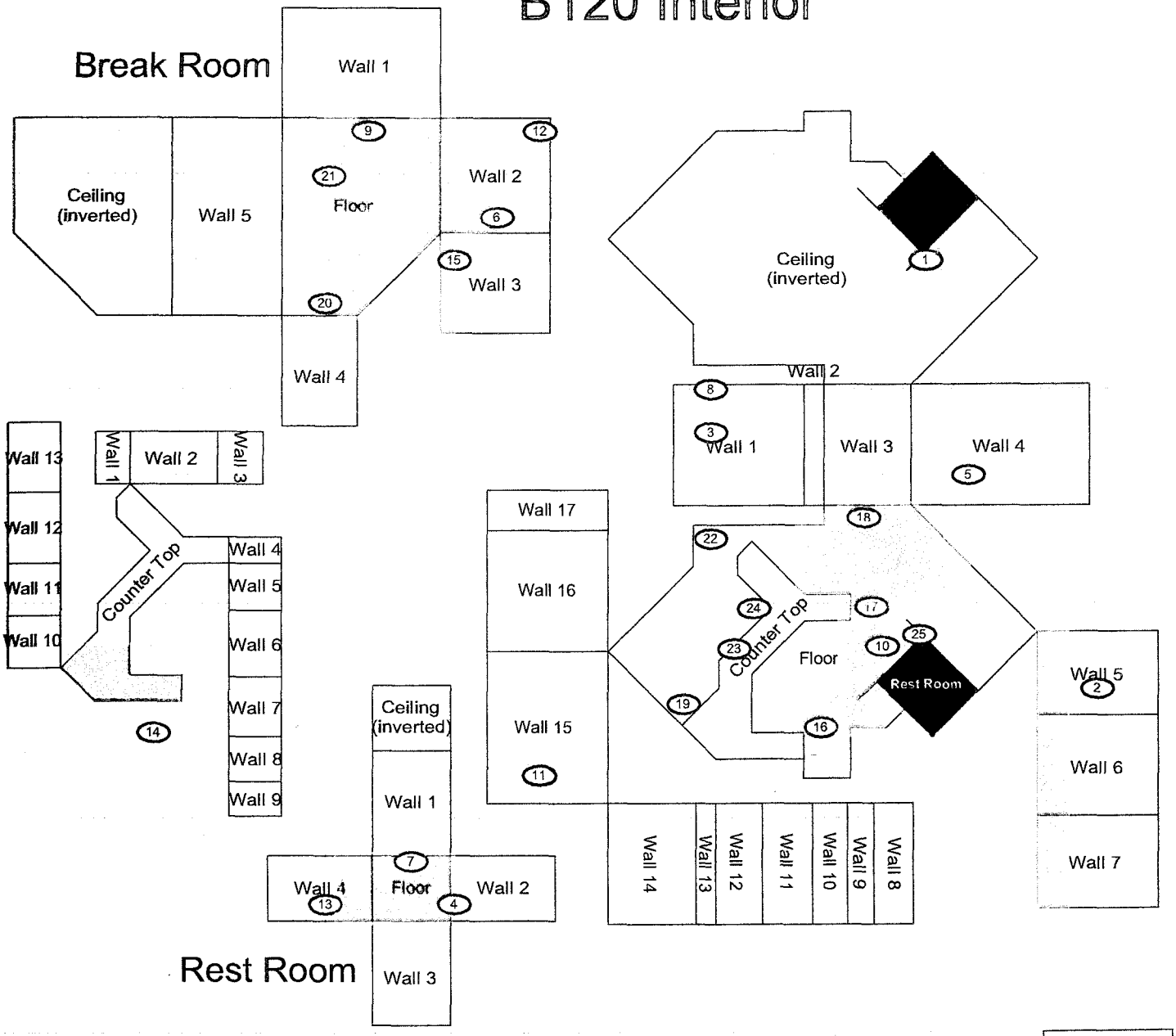
Sample Location Number	Instrument ID#	Gross Counts (cpm)	Net Activity (dpm/100 cm^2)
1	1	0	-0.3
2	1	0	-0.3
3	1	0	-0.3
4	1	0	-0.3
5	1	2	2.7
6	1	0	-0.3
7	1	0	-0.3
8	1	0	-0.3
9	1	1	1.2
10	1	0	-0.3
11	1	0	-0.3
12	1	0	-0.3
13	1	1	1.2
14	1	0	-0.3
15	1	0	-0.3
16	1	0	-0.3
17	1	1	1.2
18	1	1	1.2
19	1	1	1.2
20	1	0	-0.3
21	1	1	1.2
22	1	0	-0.3
23	1	0	-0.3
24	1	0	-0.3
25	1	1	1.2
		MIN	-0.3
		MAX	2.7
		MEAN	0.2
		SD	0.9
		Transuranic DCGL$_W$	**20**

26

PRE-DEMOLITION SURVEY FOR B120

Survey Area: 5 **Survey Unit: 120-5-001** **Classification: 3**
Building: 120
Survey Unit Description: Interior of Building
Total Area: 272 sq. m. **Total Floor Area: 62 sq. m.**

B120 Interior



Scan Area

SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

Neither the United States Government nor Kaiser Hill Co., nor DynCorp I&ET, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.

N

0 FEET 15
0 METERS 5

1 inch = 12 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
4

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707 Prepared for:

CH2MHILL Communications Group

KAISER HILL

MAP ID: 03-0188/B120-SC May 2, 2003

SURVEY UNIT 120A-5-002
RADIOLOGICAL DATA SUMMARY - PDS

Survey Unit Description: B120A (Interior)

Total Surface Activity Measurements

	22 Number Required	22 Number Obtained	
MIN	-7.6		dpm/100 cm^2
MAX	30.5		dpm/100 cm^2
MEAN	3.5		dpm/100 cm^2
STD DEV	9.1		dpm/100 cm^2
TRANSURANIC DCGL$_W$	100		dpm/100 cm^2

Removable Activity Measurements

	22 Number Required	22 Number Obtained	
MIN	0.0		dpm/100 cm^2
MAX	1.5		dpm/100 cm^2
MEAN	0.3		dpm/100 cm^2
STD DEV	0.6		dpm/100 cm^2
TRANSURANIC DCGL$_W$	20		dpm/100 cm^2

SURVEY UNIT 120A-5-002
TSA - DATA SUMMARY

Manufacturer:	NE Tech	NE Tech	NE Tech
Model:	DP-6	DP-6	DP-6
Instrument ID#:	1	2	3
Serial #:	1249	1256	1366
Cal Due Date:	4/5/03	6/30/03	6/26/03
Analysis Date:	3/27/03	3/27/03	3/27/03
Alpha Eff. (c/d):	0.205	0.234	0.209
Alpha Bkgd (cpm)	1.3	1.3	3.3
Sample Time (min)	1.5	1.5	1.5
LAB Time (min)	1.5	1.5	1.5
MDC (dpm/100cm^2)	48.0	48.0	48.0

Sample Location Number	Instrument ID#:	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm2)	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm2)	Sample Net Activity (dpm/100cm2)[1,2]
1	1	2.7	13.2	1.3	6.3	-0.8
2	2	4.0	17.1	5.3	22.6	3.1
3	1	2.7	13.2	5.3	25.9	-0.8
4	1	4.7	22.9	4.0	19.5	8.9
5	2	5.3	22.6	1.3	5.6	8.7
6	1	3.3	16.1	1.3	6.3	2.1
7	1	1.3	6.3	0.7	3.4	-7.6
8	1	1.3	6.3	1.3	6.3	-7.6
9	2	3.3	14.1	2.0	8.5	0.1
10	2	6.7	28.6	6.7	28.6	14.6
11	1	4.0	19.5	3.3	16.1	5.5
12	2	3.3	14.1	8.0	34.2	0.1
13	3	3.3	15.8	4.7	22.5	1.8
14	2	8.0	34.2	2.7	11.5	20.2
15	2	4.7	20.1	6.0	25.6	6.1
16	2	2.7	11.5	1.3	5.6	-2.5
17	1	2.7	13.2	0.7	3.4	-0.8
18	1	1.3	6.3	1.3	6.3	-7.6
19	3	9.3	44.5	4.7	22.5	30.5
20	2	3.3	14.1	1.3	5.6	0.1
21	1	4.0	19.5	2.0	9.8	5.5
22	2	2.7	11.5	2.7	11.5	-2.5

1 - Average LAB used to subtract from Gross Sample Activity

14.0	Sample LAB Average
MIN	-7.6
MAX	30.5
MEAN	3.5
SD	9.1
Transuranic $DCGL_W$	100

QC Measurements

17 QC	3	1.3	6.2	6.0	28.7	-12.9
5 QC	3	2.7	12.9	2.0	9.6	-6.2

1 - Average QC LAB used to subtract from Gross Sample Activity

19.1	QC LAB Average
MIN	-12.9
MAX	-6.2
MEAN	-9.6
Transuranic $DCGL_W$	100

30

SURVEY UNIT 120A-5-002
RSC - DATA SUMMARY

Manufacturer:	Eberline	Eberline
Model:	SAC-4	SAC-4
Instrument ID#:	4	5
Serial #:	830	952
Cal Due Date:	8/25/03	7/9/03
Analysis Date:	3/27/03	3/27/03
Alpha Eff. (c/d):	0.33	0.33
Alpha Bkgd (cpm)	0.1	0.0
Sample Time (min)	2	2
Bkgd Time (min)	10	10
MDC (dpm/100cm^2)	9.0	9.0

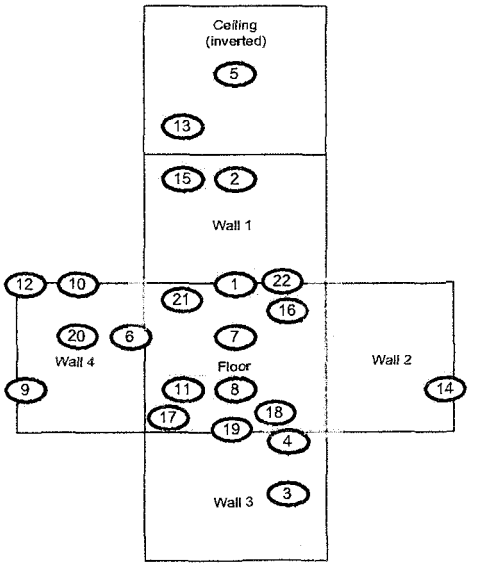
Sample Location Number	Instrument ID#	Gross Counts (cpm)	Net Activity (dpm/100 cm^2)
1	5	0	0.0
2	6	1	1.5
3	5	1	1.5
4	6	0	0.0
5	5	0	0.0
6	6	0	0.0
7	5	0	0.0
8	6	0	0.0
9	5	0	0.0
10	6	0	0.0
11	5	1	1.5
12	6	0	0.0
13	5	0	0.0
14	6	0	0.0
15	5	0	0.0
16	6	0	0.0
17	5	1	1.5
18	6	0	0.0
19	5	0	0.0
20	6	0	0.0
21	5	0	0.0
22	6	0	0.0
		MIN	0.0
		MAX	1.5
		MEAN	0.3
		SD	0.6
		Transuranic DCGL$_W$	20

31

PRE-DEMOLITION SURVEY FOR 120A

Survey Area: 5 **Survey Unit: 120A-5-002** **Classification: 3**
Building: 120A
Survey Unit Description: Interior of Building
Total Area: 50 sq. m. **Total Floor Area: 10 sq. m.**

120A Interior



Scan Area

SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

Neither the United States Government nor Kaiser Hill Co., nor DynCorp I&ET, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.

N

0 FEET 15

0 METERS 5

1 inch = 12 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s): 1, 2

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707 Prepared for:

CH2MHILL Communications Group

KAISER-HILL

MAP ID: 03-0188/120A-SC May 2, 2003

SURVEY UNIT 120B-5-003
RADIOLOGICAL DATA SUMMARY - PDS

Survey Unit Description: B120B (Interior)

Total Surface Activity Measurements

	25 Number Required	25 Number Obtained	
MIN	-7.3		dpm/100 cm^2
MAX	39.2		dpm/100 cm^2
MEAN	10.0		dpm/100 cm^2
STD DEV	12.7		dpm/100 cm^2
TRANSURANIC DCGL$_W$	100		dpm/100 cm^2

Removable Activity Measurements

	25 Number Required	25 Number Obtained	
MIN	-0.3		dpm/100 cm^2
MAX	3.0		dpm/100 cm^2
MEAN	0.3		dpm/100 cm^2
STD DEV	0.9		dpm/100 cm^2
TRANSURANIC DCGL$_W$	20		dpm/100 cm^2

34

SURVEY UNIT 120B-5-003
TSA - DATA SUMMARY

Manufacturer:	NE Tech	NE Tech	NE Tech
Model:	DP-6	DP-6	DP-6
Instrument ID#:	1	2	3
Serial #:	1417	3125	2391
Cal Due Date:	7/28/03	4/21/03	7/10/03
Analysis Date:	3/27/03	3/27/03	3/27/03
Alpha Eff. (c/d):	0.215	0.215	0.220
Alpha Bkgd (cpm)	1.3	0.0	0.0
Sample Time (min)	1.5	1.5	1.5
LAB Time (min)	1.5	1.5	1.5
MDC (dpm/100cm^2)	48.0	48.0	48.0

Sample Location Number	Instrument ID#:	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm2)	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm2)	Sample Net Activity (dpm/100cm2)[1,2]
1	1	2.7	12.6	1.3	6.0	2.0
2	1	5.3	24.7	1.3	6.0	14.1
3	2	3.3	15.3	1.3	6.0	4.8
4	2	4.7	21.9	0.0	0.0	11.3
5	1	1.3	6.0	2.7	12.6	-4.5
6	2	6.0	27.9	2.7	12.6	17.3
7	1	6.7	31.2	3.3	15.3	20.6
8	1	2.7	12.6	2.0	9.3	2.0
9	1	9.3	43.3	0.7	3.3	32.7
10	1	2.0	9.3	5.3	24.7	-1.3
11	1	8.0	37.2	0.7	3.3	26.6
12	1	7.3	34.0	2.0	9.3	23.4
13	2	4.0	18.6	0.0	0.0	8.0
14	1	2.7	12.6	2.0	9.3	2.0
15	1	1.3	6.0	2.0	9.3	-4.5
16	3	8.7	39.5	2.7	12.3	29.0
17	3	2.0	9.1	3.3	15.0	-1.5
18	1	3.3	15.3	0.0	0.0	4.8
19	3	5.3	24.1	2.0	9.1	13.5
20	1	4.7	21.9	3.3	15.3	11.3
21	1	4.0	18.6	1.3	6.0	8.0
22	1	0.7	3.3	7.3	34.0	-7.3
23	1	1.3	6.0	2.7	12.6	-4.5
24	3	3.3	15.0	3.3	15.0	4.4
25	1	10.7	49.8	4.0	18.6	39.2
					10.6	Sample LAB Average
					MIN	-7.3
					MAX	39.2
					MEAN	10.0
					SD	12.7
					Transuranic DCGL$_W$	***100***

1 - Average LAB used to subtract from Gross Sample Activity

QC Measurements

16 QC	1	8.7	40.5	4.0	18.6	20.5
9 QC	3	3.3	15.0	4.7	21.4	-5.0
					20.0	QC LAB Average
					MIN	-5.0
					MAX	20.5
					MEAN	7.7
					Transuranic DCGL$_W$	**100**

1 - Average QC LAB used to subtract from Gross Sample Activity

36

SURVEY UNIT 120B-5-003
RSC - DATA SUMMARY

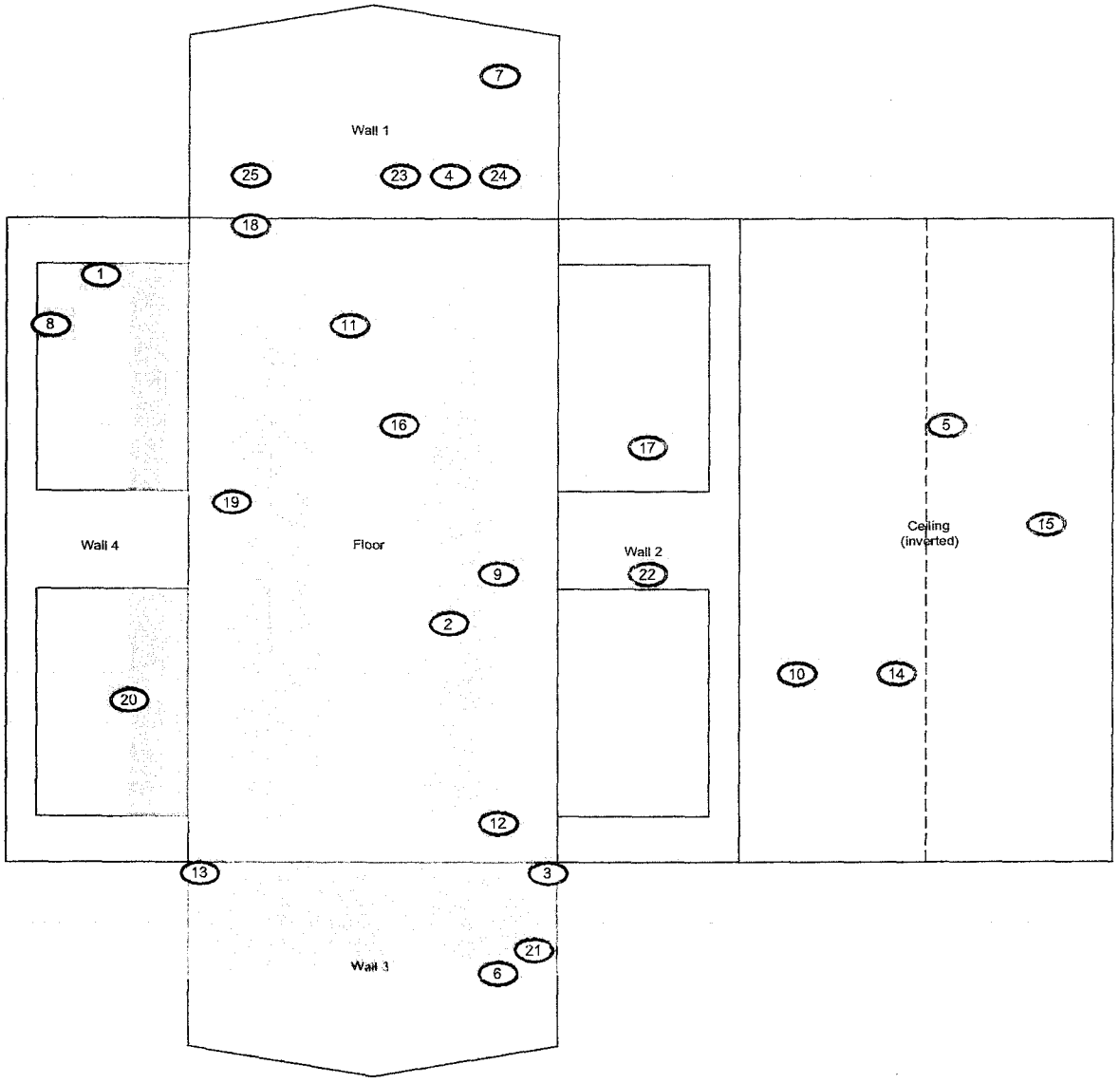
Manufacturer:	Eberline	Eberline	Eberline	Eberline
Model:	SAC-4	SAC-4	SAC-4	SAC-4
Instrument ID#:	5	6	7	8
Serial #:	767	1164	830	952
Cal Due Date:	5/13/03	6/17/03	8/25/03	7/9/03
Analysis Date:	3/27/03	3/27/03	3/27/03	3/27/03
Alpha Eff. (c/d):	0.33	0.33	0.33	0.33
Alpha Bkgd (cpm)	0.0	0.1	0.1	0.0
Sample Time (min)	2	2	2	2
Bkgd Time (min)	10	10	10	10
MDC (dpm/100cm^2)	9.0	9.0	9.0	9.0

Sample Location Number	Instrument ID#	Gross Counts (cpm)	Net Activity (dpm/100 cm^2)
1	5	0	0.0
2	7	1	1.2
3	6	0	-0.3
4	7	0	-0.3
5	8	1	1.5
6	8	0	0.0
7	6	0	-0.3
8	5	0	0.0
9	5	1	1.5
10	6	0	-0.3
11	8	0	0.0
12	6	0	-0.3
13	7	0	-0.3
14	7	0	-0.3
15	5	0	0.0
16	5	0	0.0
17	6	0	-0.3
18	8	1	1.5
19	7	0	-0.3
20	8	0	0.0
21	5	1	1.5
22	6	0	-0.3
23	7	0	-0.3
24	8	2	3.0
25	5	0	0.0
		MIN	-0.3
		MAX	3.0
		MEAN	0.3
		SD	0.9
		Transuranic DCGL$_W$	**20**

PRE-DEMOLITION SURVEY FOR 120B

Survey Area: 5 **Survey Unit: 120B-5-003** **Classification: 3**
Building: 120B
Survey Unit Description: Interior of Building
Total Area: 346 sq. m. **Total Floor Area: 96 sq. m.**

120B Interior



Scan Area

SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

Neither the United States Government nor Kaiser Hill Co., nor DynCorp I&ET, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.

N

0 FEET 15
0 METERS 5

1 inch = 12 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
2, 4

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707 **Prepared for:**

CH2M HILL Communications Group

KAISER HILL

MAP ID: 03-0188/120B-SC **April 17, 2003**

37

SURVEY UNIT 920-5-004
RADIOLOGICAL DATA SUMMARY - PDS

Survey Unit Description: B920 (Interior & Exterior)

Total Surface Activity Measurements

	25 Number Required	25 Number Obtained	
MIN	-3.0		dpm/100 cm^2
MAX	79.2		dpm/100 cm^2
MEAN	20.7		dpm/100 cm^2
STD DEV	20.9		dpm/100 cm^2
TRANSURANIC $DCGL_W$	100		dpm/100 cm^2

Removable Activity Measurements

	25 Number Required	25 Number Obtained	
MIN	-1.2		dpm/100 cm^2
MAX	3.9		dpm/100 cm^2
MEAN	0.0		dpm/100 cm^2
STD DEV	1.2		dpm/100 cm^2
TRANSURANIC $DCGL_W$	20		dpm/100 cm^2

SURVEY UNIT 920-5-004
TSA - DATA SUMMARY

Manufacturer:	NE Tech	NE Tech	NE Tech	NE Tech
Model:	DP-6	DP-6	DP-6	DP-6
Instrument ID#:	1	2	3	3
Serial #:	1256	2391	1366	1379
Cal Due Date:	6/30/03	7/10/03	6/26/03	6/30/03
Analysis Date:	3/31/03	3/31/03	3/31/03	3/31/03
Alpha Eff. (c/d):	0.234	0.220	0.209	0.219
Alpha Bkgd (cpm)	2.0	1.3	4.0	0.7
Sample Time (min)	1.5	1.5	1.5	1.5
LAB Time (min)	1.5	1.5	1.5	1.5
MDC (dpm/100cm^2)	48.0	48.0	48.0	48.0

Sample Location Number	Instrument ID#:	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm2)	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm2)	Sample Net Activity (dpm/100cm2)[1,2]
1	4	19.3	88.1	1.3	5.9	79.2
2	4	7.0	32.0	0.7	3.2	23.1
3	4	3.3	15.1	0.7	3.2	6.2
4	3	6.0	28.7	5.3	25.4	19.8
5	3	9.3	44.5	4.0	19.1	35.6
6	1	4.7	20.1	2.7	11.5	11.2
7	1	16.7	71.4	3.3	14.1	62.5
8	4	1.3	5.9	0.7	3.2	-3.0
9	3	1.3	6.2	5.3	25.4	-2.7
10	1	6.7	28.6	0.0	0.0	19.7
11	1	6.0	25.6	0.0	0.0	16.7
12	1	6.0	25.6	0.7	3.0	16.7
13	1	5.3	22.6	2.1	9.0	13.8
14	1	15.3	65.4	0.0	0.0	56.5
15	4	2.7	12.3	0.0	0.0	3.4
16	2	4.0	18.2	3.3	15.0	9.3
17	1	3.3	14.1	2.0	8.5	5.2
18	1	4.0	17.1	0.7	3.0	8.2
19	2	2.0	9.1	3.3	15.0	0.2
20	1	6.0	25.6	0.7	3.0	16.7
21	2	5.3	24.1	0.7	3.2	15.2
22	1	2.7	11.5	4.7	20.1	2.6
23	1	9.3	39.7	0.7	3.0	30.8
24	3	8.0	38.3	2.0	9.6	29.4
25	3	10.7	51.2	4.0	19.1	42.3
					8.9	Sample LAB Average
					MIN	-3.0
					MAX	79.2
					MEAN	20.7
					SD	20.9
					Transuranic DCGL$_W$	100

1 - Average LAB used to subtract from Gross Sample Activity

QC Measurements

21 QC	4	1.3	5.9	1.3	5.9	-7.1
25 QC	1	3.3	14.1	4.7	20.1	1.1
					13.0	QC LAB Average
					MIN	-7.1
					MAX	1.1
					MEAN	-3.0
					Transuranic DCGL$_W$	100

1 - Average QC LAB used to subtract from Gross Sample Activity

40

SURVEY UNIT 920-5-004
RSC - DATA SUMMARY

Manufacturer:	Eberline	Eberline	Eberline	Eberline
Model:	SAC-4	SAC-4	SAC-4	SAC-4
Instrument ID#:	5	6	7	8
Serial #:	767	1164	830	952
Cal Due Date:	5/13/03	6/17/03	8/25/03	7/9/03
Analysis Date:	3/31/03	3/31/03	3/31/03	3/31/03
Alpha Eff. (c/d):	0.33	0.33	0.33	0.33
Alpha Bkgd (cpm)	0.4	0.2	0.2	0.1
Sample Time (min)	2	2	2	2
Bkgd Time (min)	10	10	10	10
MDC (dpm/100cm^2)	9.0	9.0	9.0	9.0

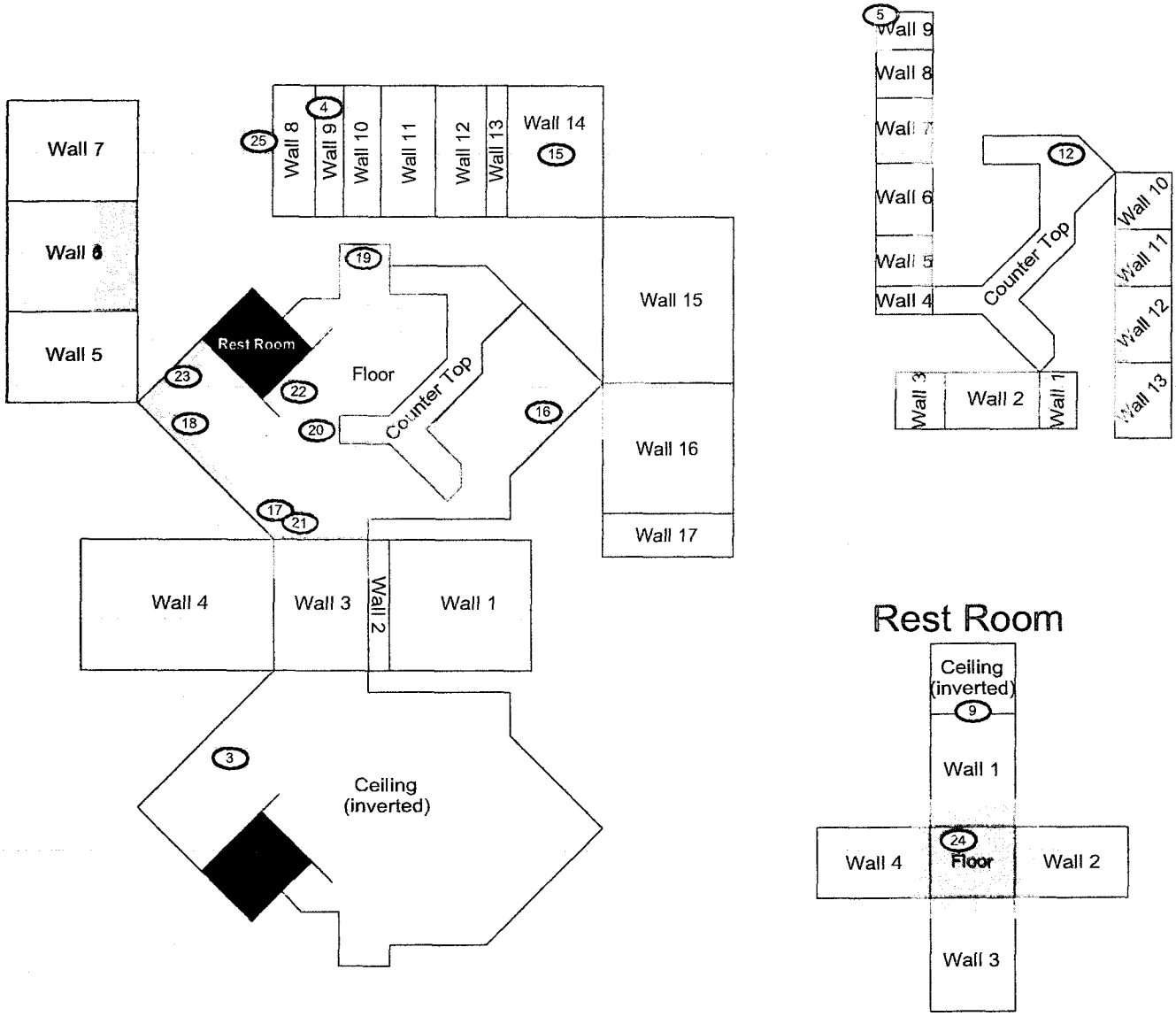
Sample Location Number	Instrument ID#	Gross Counts (cpm)	Net Activity (dpm/100 cm^2)
1	5	1	0.3
2	6	0	-0.6
3	7	3	3.9
4	8	0	-0.3
5	5	0	-1.2
6	6	1	0.9
7	7	0	-0.6
8	8	1	1.2
9	5	0	-1.2
10	6	0	-0.6
11	7	0	-0.6
12	8	0	-0.3
13	5	1	0.3
14	6	0	-0.6
15	7	0	-0.6
16	8	0	-0.3
17	5	2	1.8
18	6	0	-0.6
19	7	0	-0.6
20	8	1	1.2
21	5	0	-1.2
22	6	0	-0.6
23	7	0	-0.6
24	8	0	-0.3
25	5	1	0.9
		MIN	-1.2
		MAX	3.9
		MEAN	0.0
		SD	1.2
		Transuranic DCGL$_W$	**20**

41

PRE-DEMOLITION SURVEY FOR B920

Survey Area: 5 **Survey Unit: 920-5-004** **Classification: 3**
Building: 920
Survey Unit Description: Interior & Exterior of Building
Total Area: 471 sq. m. **Total Floor Area: 47 sq. m.**

B920 Interior



Rest Room

Scan Area

SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

Neither the United States Government nor Kaiser Hill Co., nor DynCorp I&ET, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.

N

0 FEET 15
0 METERS 5

1 inch = 12 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 2, 3

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707 **Prepared for:**

CH2MHILL Communications Group

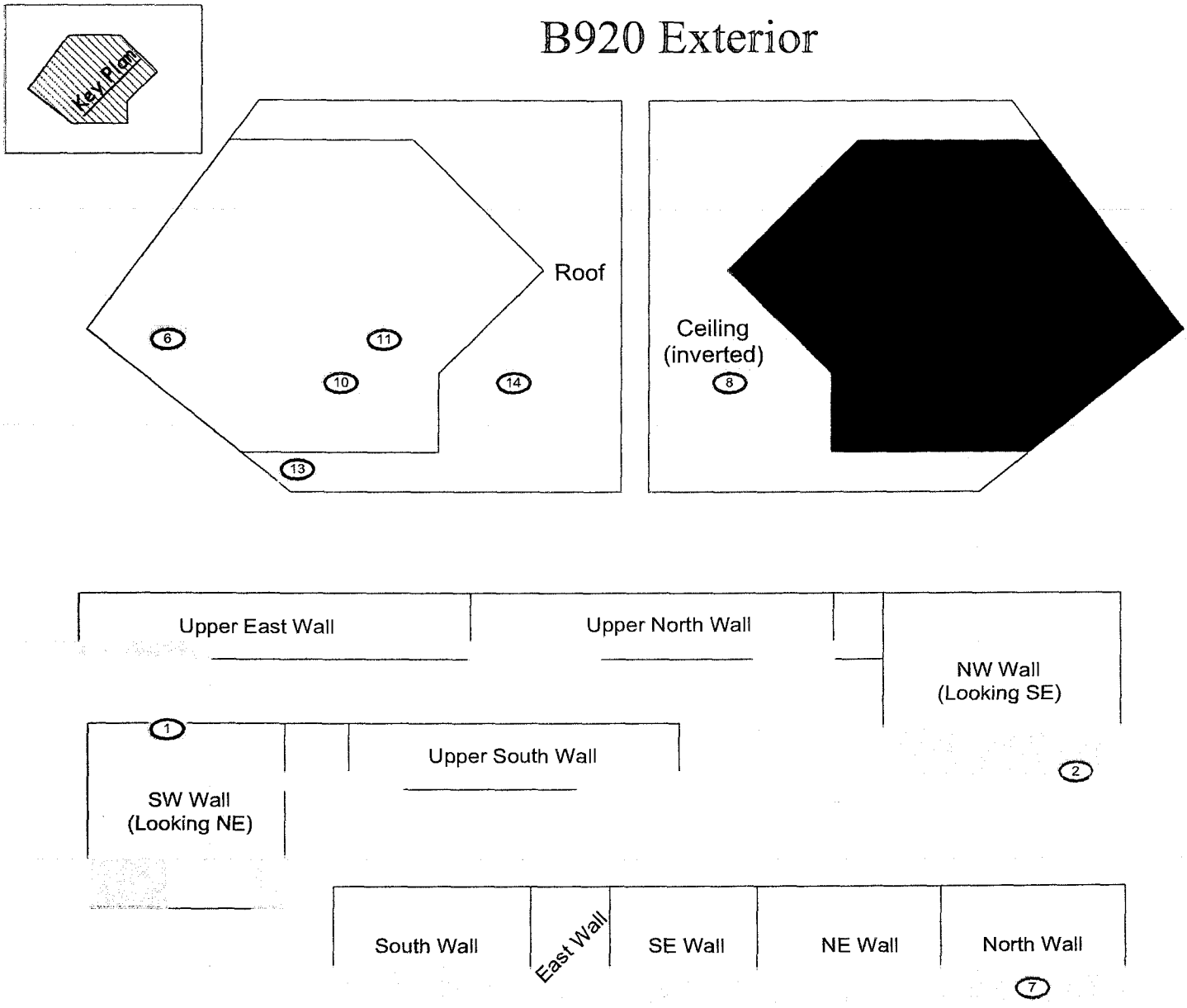
KAISER HILL

MAP ID: 03-0188/920-IN-SC **April 17, 2003**

PRE-DEMOLITION SURVEY FOR B920

Survey Area: 5 **Survey Unit: 920-5-004** **Classification: 3**
Building: 920
Survey Unit Description: Interior & Exterior of Building
Total Area: 471 sq. m. **Total Floor Area: 47 sq. m.**

B920 Exterior



Scan Area

SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

Neither the United States Government nor Kaiser Hill Co., nor DynCorp I&ET, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.

N

0 FEET 15
0 METERS 5

1 inch = 12 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 2, 3

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

CH2MHILL Communications Group

Prepared for: KAISER HILL

MAP ID: 03-0188/920-EX-SC April 17, 2003

SURVEY UNIT 920A-5-005
RADIOLOGICAL DATA SUMMARY - PDS

Survey Unit Description: B920A (Interior & Exterior)

Total Surface Activity Measurements

	22 Number Required	22 Number Obtained	
MIN	-13.8		dpm/100 cm^2
MAX	62.1		dpm/100 cm^2
MEAN	10.0		dpm/100 cm^2
STD DEV	18.0		dpm/100 cm^2
TRANSURANIC DCGL$_W$	100		dpm/100 cm^2

Removable Activity Measurements

	22 Number Required	22 Number Obtained	
MIN	-0.6		dpm/100 cm^2
MAX	4.2		dpm/100 cm^2
MEAN	0.5		dpm/100 cm^2
STD DEV	1.3		dpm/100 cm^2
TRANSURANIC DCGL$_W$	20		dpm/100 cm^2

4/5

SURVEY UNIT 920A-5-005
TSA - DATA SUMMARY

Manufacturer:	NE Tech	NE Tech
Model:	DP-6	DP-6
Instrument ID#:	1	2
Serial #:	1417	2391
Cal Due Date:	7/28/03	7/10/03
Analysis Date:	3/26/03	3/26/03
Alpha Eff. (c/d):	0.215	0.220
Alpha Bkgd (cpm)	0.7	1.3
Sample Time (min)	1.5	1.5
LAB Time (min)	1.5	1.5
MDC (dpm/100cm^2)	48.0	48.0

Sample Location Number	Instrument ID#:	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm2)	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm2)	Sample Net Activity (dpm/100cm2)[1,2]
1	2	2.7	12.3	1.3	5.9	-1.5
2	1	6.0	27.9	4.0	18.6	14.1
3	1	3.3	15.3	4.7	21.9	1.6
4	1	8.0	37.2	4.7	21.9	23.4
5	2	16.7	75.9	2.0	9.1	62.1
6	1	9.4	43.7	5.3	24.7	29.9
7	2	1.3	5.9	1.3	5.9	-7.9
8	1	6.7	31.2	3.7	17.2	17.4
9	1	12.0	55.8	0.7	3.3	42.0
10	2	2.7	12.3	4.0	18.2	-1.5
11	2	0.0	0.0	0.0	0.0	-13.8
12	2	4.0	18.2	4.7	21.4	4.4
13	2	4.7	21.4	0.7	3.2	7.6
14	1	7.3	34.0	4.7	21.9	20.2
15	1	7.3	34.0	4.7	21.9	20.2
16	2	2.0	9.1	2.7	12.3	-4.7
17	2	0.7	3.2	2.0	9.1	-10.6
18	2	5.3	24.1	1.3	5.9	10.3
19	2	4.0	18.2	3.3	15.0	4.4
20	2	2.7	12.3	1.3	5.9	-1.5
21	1	2.7	12.6	5.3	24.7	-1.2
22	1	4.0	18.6	3.3	15.3	4.8

1 - Average LAB used to subtract from Gross Sample Activity

13.8	Sample LAB Average
MIN	-13.8
MAX	62.1
MEAN	10.0
SD	18.0
Transuranic DCGL$_W$	**100**

QC Measurements

9 QC	2	4.7	21.4	3.3	15.0	7.6
20 QC	1	2.7	12.6	2.7	12.6	-1.2

1 - Average QC LAB used to subtract from Gross Sample Activity

13.8	QC LAB Average
MIN	-1.2
MAX	7.6
MEAN	3.2
Transuranic DCGL$_W$	**100**

4/6

SURVEY UNIT 920A-5-005
RSC - DATA SUMMARY

Manufacturer:	Eberline	Eberline	Eberline	Eberline
Model:	SAC-4	SAC-4	SAC-4	SAC-4
Instrument ID#:	3	4	5	6
Serial #:	767	1164	830	952
Cal Due Date:	5/13/03	6/17/03	8/25/03	7/9/03
Analysis Date:	3/26/03	3/26/03	3/26/03	3/26/03
Alpha Eff. (c/d):	0.33	0.33	0.33	0.33
Alpha Bkgd (cpm)	0.2	0.0	0.0	0.1
Sample Time (min)	2	2	2	2
Bkgd Time (min)	10	10	10	10
MDC (dpm/100cm^2)	9.0	9.0	9.0	9.0

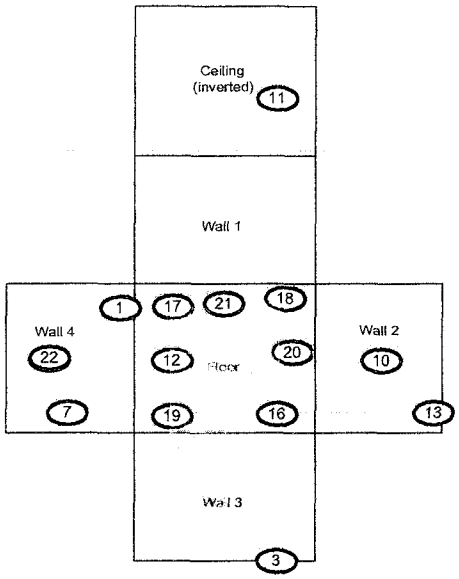
Sample Location Number	Instrument ID#	Gross Counts (cpm)	Net Activity (dpm/100 cm^2)
1	3	0	-0.6
2	4	0	0.0
3	5	1	1.5
4	6	0	-0.3
5	6	0	-0.3
6	3	0	-0.6
7	4	0	0.0
8	5	1	1.5
9	6	1	1.2
10	3	0	-0.6
11	4	0	0.0
12	5	0	0.0
13	6	0	-0.3
14	3	0	-0.6
15	4	2	3.0
16	5	0	0.0
17	3	1	0.9
18	4	1	1.5
19	5	0	0.0
20	6	3	4.2
21	3	0	-0.6
22	4	0	0.0
		MIN	-0.6
		MAX	4.2
		MEAN	0.5
		SD	1.3
		Transuranic DCGL$_W$	**20**

47

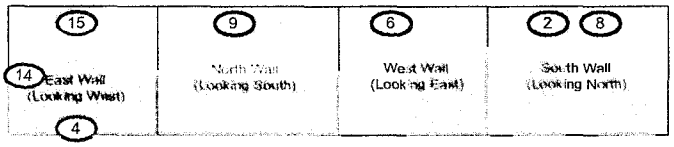
PRE-DEMOLITION SURVEY FOR 920A

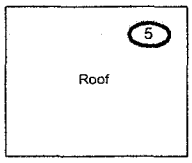
Survey Area: 5 **Survey Unit: 920A-5-005** **Classification: 3**
Building: 920A
Survey Unit Description: Interior & Exterior of Building
Total Area: 91 sq. m. **Total Floor Area: 10 sq. m.**

920A Interior



920A Exterior





Scan Area

SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

Neither the United States Government nor Kaiser Hill Co., nor DynCorp I&ET, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.

N

0 FEET 15
0 METERS 5

1 inch = 12 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 2

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707 **Prepared for:**

CH2MHILL Communications Group

KAISER HILL

MAP ID: 03-0188/920A-SC **April 17, 2003**

43

SURVEY UNIT 920B-5-006
RADIOLOGICAL DATA SUMMARY - PDS

Survey Unit Description: B920B (Interior & Exterior)

Total Surface Activity Measurements

	25 Number Required	25 Number Obtained	
MIN	-12.2		dpm/100 cm^2
MAX	51.7		dpm/100 cm^2
MEAN	9.7		dpm/100 cm^2
STD DEV	16.2		dpm/100 cm^2
TRANSURANIC DCGL$_W$	100		dpm/100 cm^2

Removable Activity Measurements

	25 Number Required	25 Number Obtained	
MIN	-1.2		dpm/100 cm^2
MAX	0.9		dpm/100 cm^2
MEAN	-0.5		dpm/100 cm^2
STD DEV	0.6		dpm/100 cm^2
TRANSURANIC DCGL$_W$	20		dpm/100 cm^2

5c

SURVEY UNIT 920B-5-006
TSA - DATA SUMMARY

Manufacturer:	NE Tech	NE Tech	NE Tech	NE Tech
Model:	DP-6	DP-6	DP-6	DP-6
Instrument ID#:	1	2	3	4
Serial #:	1249	1417	3115	3114
Cal Due Date:	4/5/03	7/28/03	9/24/03	9/3/03
Analysis Date:	3/31/03	3/31/03	3/31/03	3/31/03
Alpha Eff. (c/d):	0.205	0.215	0.225	0.219
Alpha Bkgd (cpm)	0.7	2.7	2.7	4.0
Sample Time (min)	1.5	1.5	1.5	1.5
LAB Time (min)	1.5	1.5	1.5	1.5
MDC (dpm/100cm^2)	48.0	48.0	48.0	48.0

Sample Location Number	Instrument ID#:	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm2)	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm2)	Sample Net Activity (dpm/100cm2)[1,2]
1	3	4.0	17.8	1.3	5.8	2.3
2	1	3.3	16.1	4.0	19.5	0.6
3	2	2.7	12.6	2.0	9.3	-2.9
4	2	3.3	15.3	2.0	9.3	-0.1
5	2	7.3	34.0	3.3	15.3	18.5
6	3	3.3	14.7	4.7	20.9	-0.8
7	2	2.7	12.6	2.0	9.3	-2.9
8	2	3.3	15.3	0.7	3.3	-0.1
9	2	4.7	21.9	6.7	31.2	6.4
10	1	3.3	16.1	2.7	13.2	0.6
11	1	2.0	9.8	0.0	0.0	-5.7
12	2	7.3	34.0	7.3	34.0	18.5
13	2	8.0	37.2	1.3	6.0	21.8
14	4	6.7	30.6	4.7	21.5	15.1
15	1	10.0	48.8	3.3	16.1	33.3
16	4	7.3	33.3	4.7	21.5	17.9
17	4	6.0	27.4	6.7	30.6	11.9
18	4	8.7	39.7	4.7	21.5	24.3
19	1	3.3	16.1	1.3	6.3	0.6
20	2	13.3	61.9	3.3	15.3	46.4
21	3	2.7	12.0	5.3	23.6	-3.4
22	1	3.3	16.1	1.3	6.3	0.6
23	1	3.3	16.1	3.3	16.1	0.6
24	4	14.7	67.1	3.3	15.1	51.7
25	2	0.7	3.3	3.3	15.3	-12.2
					15.4	Sample LAB Average
					MIN	-12.2
					MAX	51.7
					MEAN	9.7
					SD	16.2
					Transuranic DCGL$_W$	**100**

1 - Average LAB used to subtract from Gross Sample Activity

QC Measurements

24 QC	1	3.3	16.1	2.0	9.8	-4.4
15 QC	2	10.0	46.5	6.7	31.2	26.1
					20.5	QC LAB Average
					MIN	-4.4
					MAX	26.1
					MEAN	10.8
					Transuranic DCGL$_W$	**100**

1 - Average QC LAB used to subtract from Gross Sample Activity

51

SURVEY UNIT 920B-5-006
RSC - DATA SUMMARY

Manufacturer:	Eberline	Eberline	Eberline	Eberline
Model:	SAC-4	SAC-4	SAC-4	SAC-4
Instrument ID#:	5	6	7	8
Serial #:	767	1164	830	952
Cal Due Date:	5/13/03	6/17/03	8/25/03	7/9/03
Analysis Date:	3/31/03	3/31/03	3/31/03	3/31/03
Alpha Eff. (c/d):	0.33	0.33	0.33	0.33
Alpha Bkgd (cpm)	0.4	0.2	0.2	0.1
Sample Time (min)	2	2	2	2
Bkgd Time (min)	10	10	10	10
MDC (dpm/100cm^2)	9.0	9.0	9.0	9.0

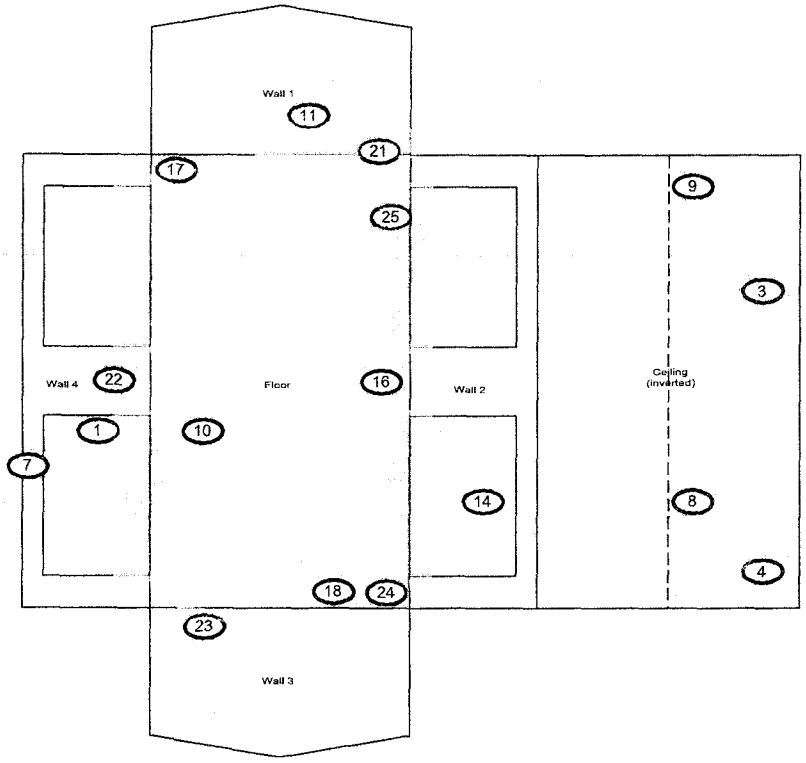
Sample Location Number	Instrument ID#	Gross Counts (cpm)	Net Activity (dpm/100 cm^2)
1	5	0	-1.2
2	6	0	-0.6
3	7	0	-0.6
4	8	0	-0.3
5	5	0	-1.2
6	6	1	0.9
7	7	1	0.9
8	8	0	-0.3
9	5	0	-1.2
10	6	1	0.9
11	7	0	-0.6
12	8	0	-0.3
13	5	0	-1.2
14	6	0	-0.6
15	7	0	-0.6
16	8	0	-0.3
17	5	0	-1.2
18	6	0	-0.6
19	7	0	-0.6
20	8	0	-0.3
21	5	0	-1.2
22	6	0	-0.6
23	7	0	-0.6
24	8	0	-0.3
25	5	0	-1.2
		MIN	-1.2
		MAX	0.9
		MEAN	-0.5
		SD	0.6
		Transuranic DCGL$_W$	**20**

52

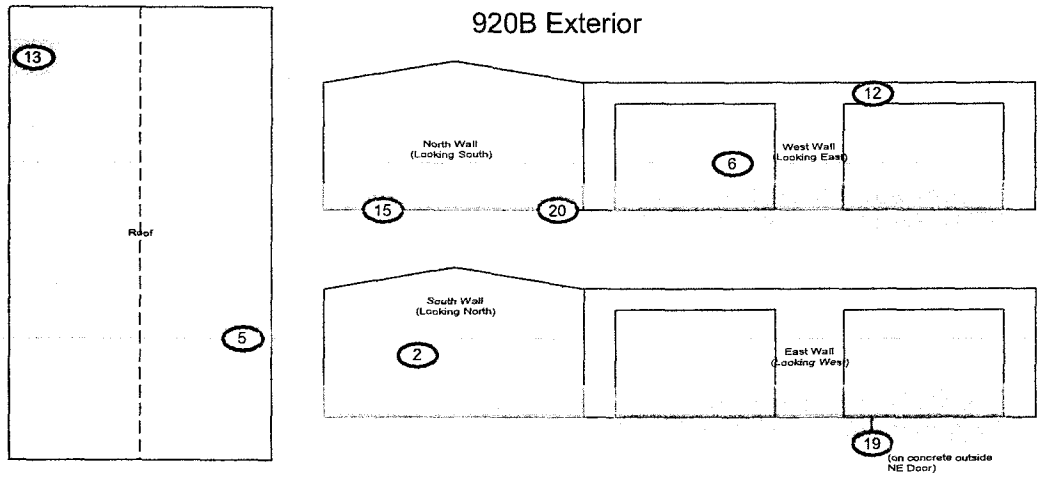
PRE-DEMOLITION SURVEY FOR 920B

Survey Area: 5 **Survey Unit: 920B-5-006** **Classification: 3**
Building: 920B
Survey Unit Description: Interior & Exterior of Building
Total Area: 597 sq. m. **Total Floor Area: 96 sq. m.**

920B Interior



920B Exterior



Scan Area

SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

Neither the United States Government nor Kaiser Hill Co., nor DynCorp I&ET, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 2, 3, 4

0 FEET 25
0 METERS 8

1 inch = 18 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707 **Prepared for:**

CH2MHILL
Communications Group

KAISER HILL

MAP ID: 03-0188\920B-SC **April 17, 2003**

53

ATTACHMENT D

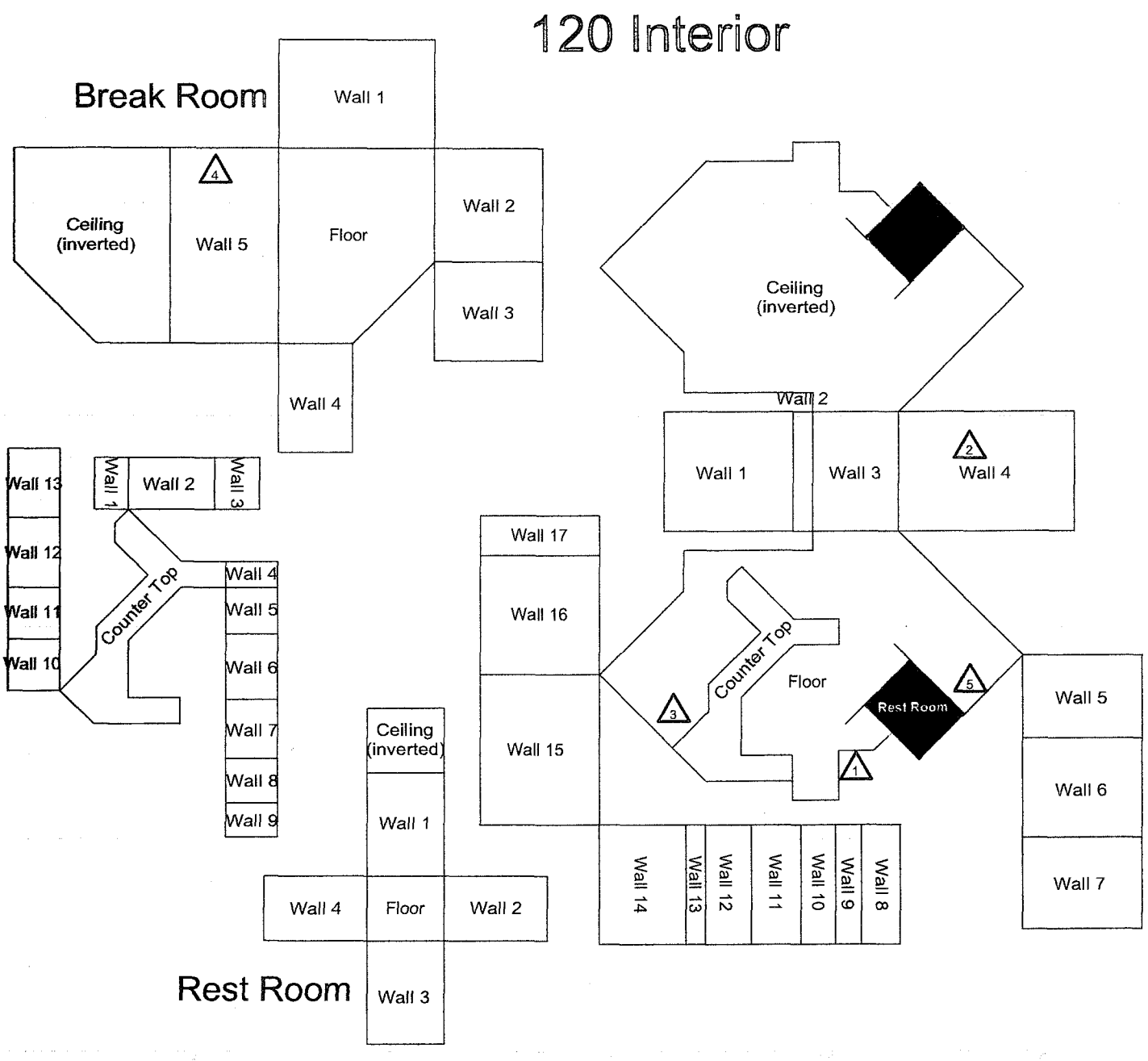
Chemical Data Summaries and Sample Maps

Beryllium Data Summary

Sample Number	Map Survey Point Location	Room	Sample Location	Result ($\mu g/100\ cm^2$)
Building 120				
120-04152003-315-101	1	Storage	On metal air handler	< 0.1
120-04152003-315-102	2	Main	On Digatron Power Panel, east wall	< 0.1
120-04152003-315-103	3	Main	On floor in corner	< 0.1
120-04152003-315-104	4	Break	On window ledge, west wall	< 0.1
120-04152003-315-105	5	Main	On ceramic tile floor	< 0.1
Building 120A				
120A-04152003-315-101	1	Main	Top of in-wall electrical heater	< 0.1
120A-04152003-315-102	2	Main	Top of in-wall electrical AC unit	< 0.1
120A-04152003-315-103	3	Main	On 12" floor tile at door	< 0.1
120A-04152003-315-104	4	Main	Top of refrigerator	< 0.1
120A-04152003-315-105	5	Main	On 12" floor tile	< 0.1
Building 120B				
120B-04152003-315-101	1	Main	On horizontal metal I brace, north wall	< 0.1
120B-04152003-315-102	2	Main	On horizontal metal I brace, floor	< 0.1
120B-04152003-315-103	3	Main	On electrical panel, SE corner	< 0.1
120B-04152003-315-104	4	Main	On horizontal metal I brace, floor	< 0.1
120B-04152003-315-105	5	Main	On horizontal metal I brace, south wall	< 0.1
Building 920				
920-04152003-315-101	1	Main	Top of Digatron Power Panel	< 0.1
920-04152003-315-102	2	Storage	Top of metal air handler	< 0.1
920-04152003-315-103	3	Restroom	Top of lavatory fluorescent light	< 0.1
920-04152003-315-104	4	Main	On floor by north door	< 0.1
920-04152003-315-105	5	Main	Window sill, east wall	< 0.1
Building 920A				
920A-04152003-315-101	1	Main	Top of in-wall AC unit, north wall	< 0.1
920A-04152003-315-102	2	Main	On beige and brown tile floor	< 0.1
920A-04152003-315-103	3	Main	On wooden shelf, west wall	< 0.1
920A-04152003-315-104	4	Main	On beige and brown tile floor at east wall	< 0.1
920A-04152003-315-105	5	Main	On window sill, east wall	< 0.1
Building 920B				
920B-04152003-315-101	1	Main	On metal horizontal I brace, north wall	< 0.1
920B-04152003-315-102	2	Main	On concrete floor at east wall	< 0.1
920B-04152003-315-103	3	Main	Top of electrical power panel, south wall	< 0.1
920B-04152003-315-104	4	Main	On metal horizontal I brace, west wall	< 0.1
920B-04152003-315-105	5	Main	On metal window sill, south wall	< 0.1

CHEMICAL SAMPLE MAP

Building 120
Beryllium



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

Neither the United States Government nor Kaiser Hill Co., nor DynCorp I&ET, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.

N

0 FEET 15

0 METERS 5

1 inch = 12 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

Prepared for:

CH2MHILL Communications Group

KAISER HILL

MAP ID: 03-0188/B120-IN-BE

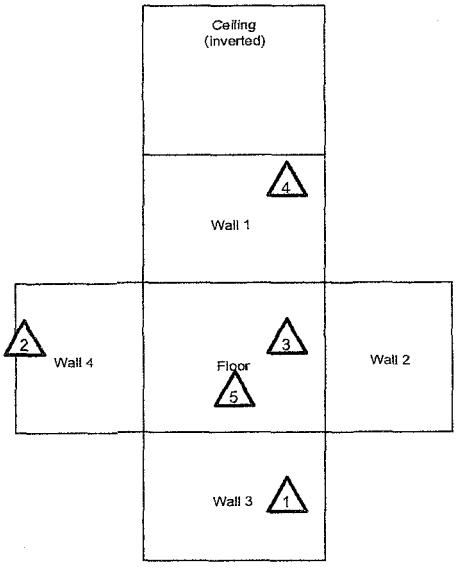
April 16, 2003

56

CHEMICAL SAMPLE MAP

Building 120A
Beryllium

120A Interior



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

Neither the United States Government nor Kaiser Hill Co., nor DynCorp I&ET, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.

N

0 FEET 15

0 METERS 5

1 inch ≈ 12 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

Prepared for:

CH2MHILL
Communications Group

MAP ID: 03-0188/120A-IN-BE

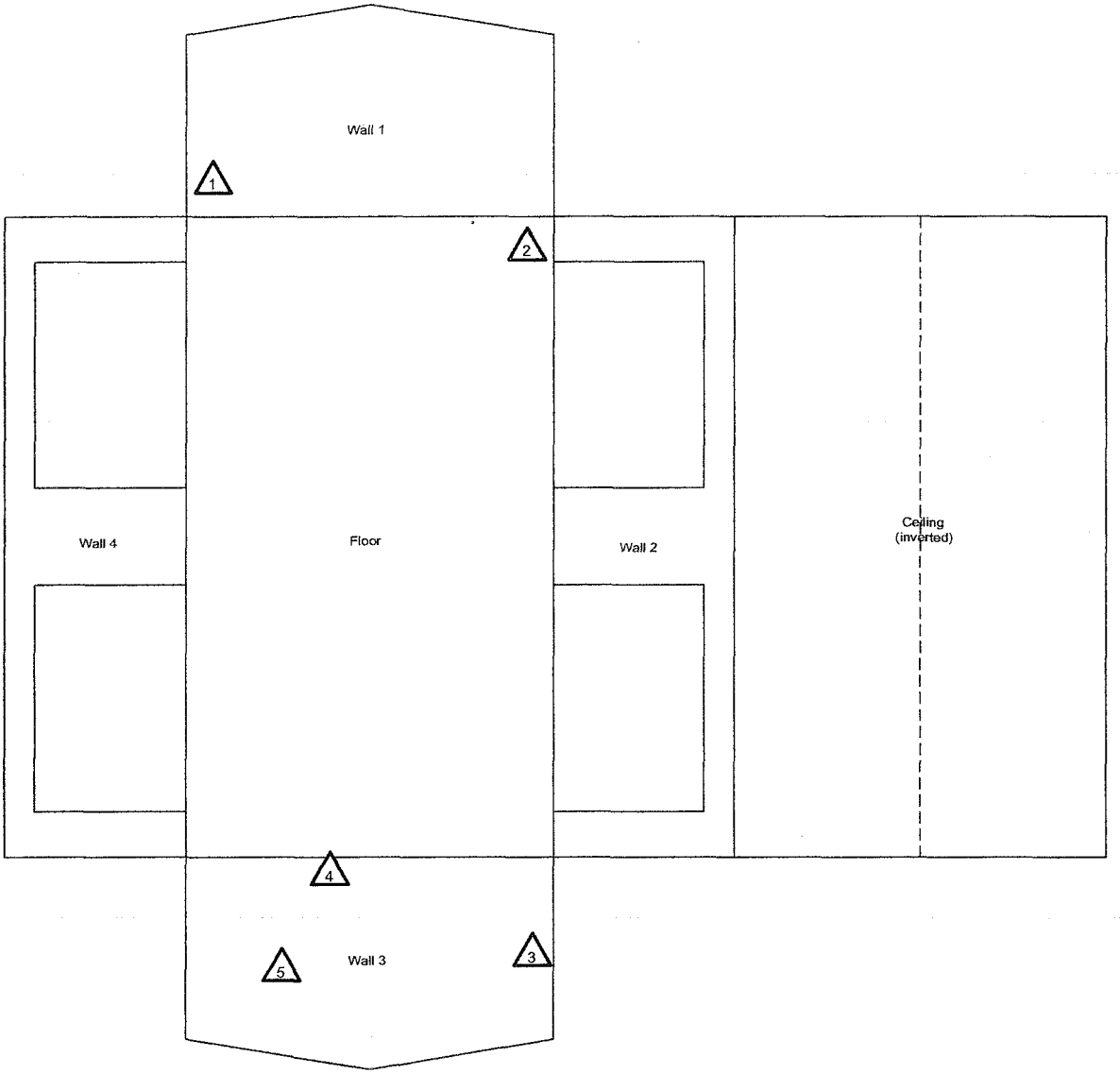
April 16, 2003

57

CHEMICAL SAMPLE MAP

Building 120B
Beryllium

120B Interior



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

Neither the United States Government nor Kaiser Hill Co., nor DynCorp I&ET, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.

N

0 FEET 15

0 METERS 5

1 inch = 12 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

Prepared for:

CH2MHILL
Communications Group

KAISER HILL

MAP ID: 03-0188/120B-IN-BE

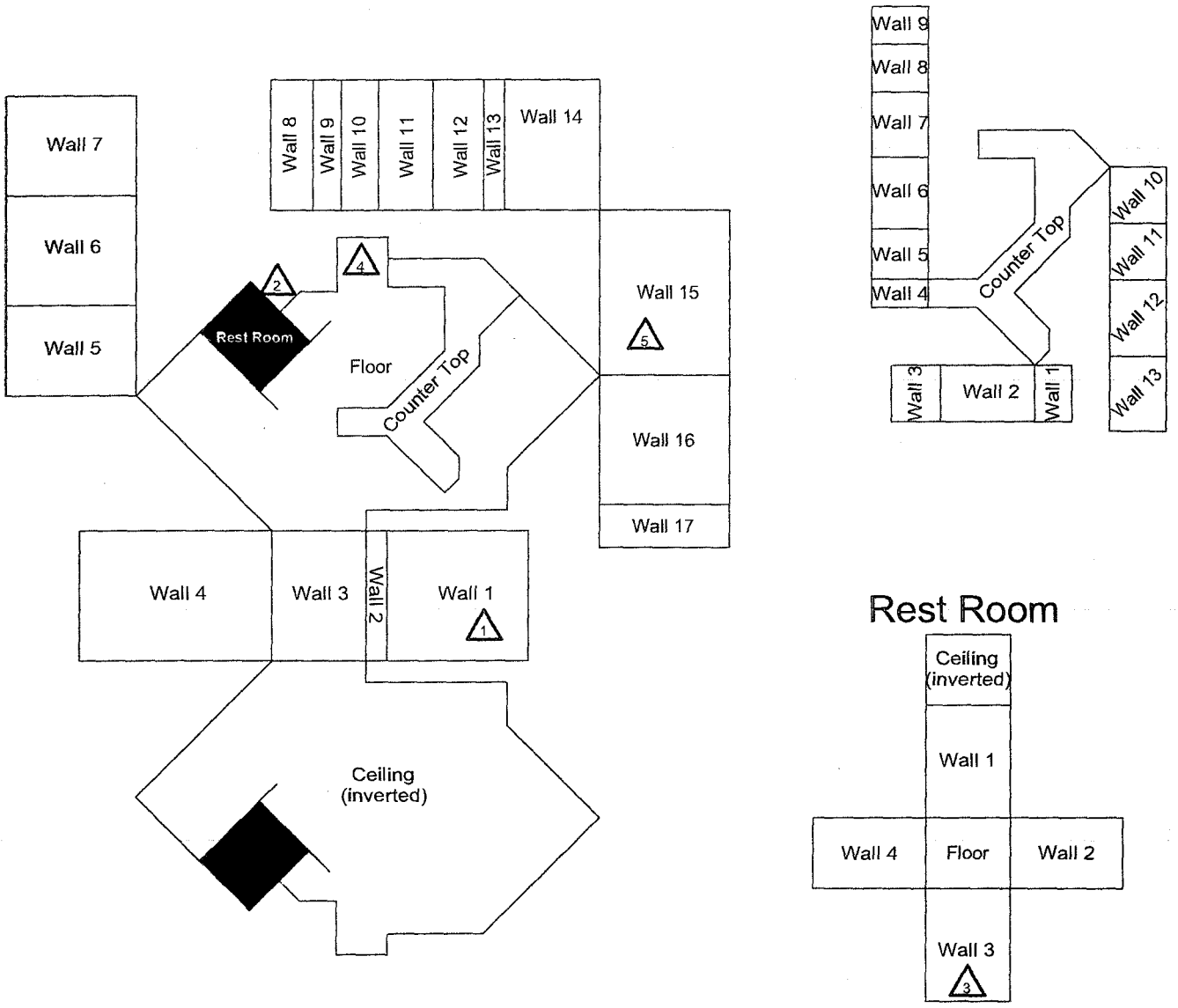
April 15, 2003

53

CHEMICAL SAMPLE MAP

Building 920
Beryllium

920 Interior



Rest Room

SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

Neither the United States Government nor Kaiser Hill Co., nor DynCorp I&ET, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.

N

0 FEET 15

0 METERS 5

1 inch = 12 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

CH2MHILL
Communications Group

Prepared for:

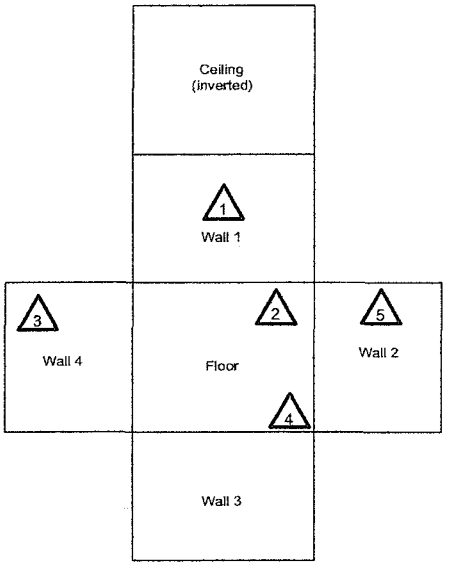
MAP ID: 03-0188/920-IN-BE

April 16, 2003

CHEMICAL SAMPLE MAP

Building 920A
Beryllium

920A Interior



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

Neither the United States Government nor Kaiser Hill Co., nor DynCorp I&ET, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.

N

0 FEET 15

0 METERS 5

1 inch = 12 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

CH2MHILL
Communications Group

Prepared for:

MAP ID: 03-0188/920A-IN-BE

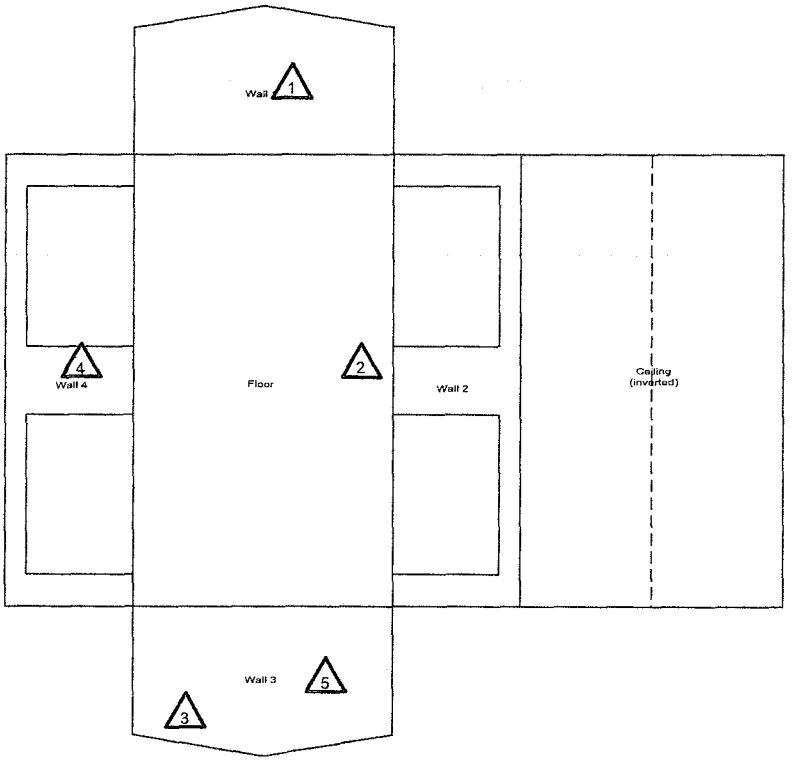
April 16, 2003

66

CHEMICAL SAMPLE MAP

Building 920B
Beryllium

920B Interior



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

Neither the United States Government nor Kaiser Hill Co., nor DynCorp I&ET, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.

N

0 FEET 25

0 METERS 8

1 inch = 18 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

Prepared for:

CH2MHILL
Communications Group

KAISER HILL

MAP ID: 03-0188/920B-IN-BE

April 15, 2003

ATTACHMENT E

Data Quality Assessment (DQA) Detail

DATA QUALITY ASSESSMENT (DQA)

VERIFICATION & VALIDATION OF RESULTS

V&V of the data confirm that appropriate quality controls are implemented throughout the sampling and analysis process, and that any substandard controls result in qualification or rejection of the data in question. The required quality controls and their implementation are summarized in a tabular, checklist format for each category of data – radiological surveys and chemical analyses (specifically beryllium.)

DQA criteria and results are provided in a tabular format for each suite of surveys or chemical analyses performed; the radiological survey assessment is provided in Table E-1, and beryllium in E-2. A data completeness summary for all results is given in Table E-3.

All relevant Quality records supporting this report are maintained in the RISS Characterization Project Files. This report will be submitted to the CERCLA Administrative Record for permanent storage within 30 days of approval by the Regulators. All radiological data are organized into Survey Packages, which correlate to unique (MARSSIM) Survey Units. Chemical data are organized by RIN (Report Identification Number) and are traceable to the sample number and corresponding sample location.

Beta/gamma survey designs were not implemented for the Area 5, Group 15 facilities based on the conservatism of the transuranic limits used as DCGLs in the unrestricted release decision process. Survey designs were implemented based on the transuranic limits used as DCGLs in the unrestricted release decision process. All survey results were evaluated against, and were less than the Transuranic $DCGL_w$ (100 dpm/100cm^2) and the Uranium $DCGL_w$ (5,000 dpm/100cm^2) unrestricted release limits.

Consistent with EPA's G-4 DQO process, the radiological survey design (for those survey units performed per PDS requirements) was optimized by checking actual measurement results (acquired during pre-demolition surveys) against model output with original estimates. Use of actual sample/survey (result) variances in the MARSSIM DQO model confirms that an adequate number of surveys were acquired.

SUMMARY

In summary, the data presented in this report have been verified and validated relative to the quality requirements and project decisions as stated in the original DQOs. All data are useable based on qualifications stated herein and are considered satisfactory without qualification. All media surveyed and sampled yielded results less than their associated action levels and with acceptable uncertainties.

63

Based upon an independent review of the radiological data, it is determined that the original project DQOs satisfied MARSSIM guidance. All facility contamination levels were below applicable unrestricted release levels. Minimum survey requirements were met, sampling/survey protocol was performed in accordance with applicable procedures, survey units were properly designed and bounded, and instrument performance and calibration were within acceptable limits. All results meet the PDS unrestricted release criteria.

Chain of Custody was intact; documentation was complete, hold times were acceptable (where applicable,) and packaging integrity/custody seals were maintained throughout the sampling/analysis process. Level 2 Isolation Controls have been posted to prevent the inadvertent introduction of contamination into the facility. On this basis, the Area 5, Group 15 facilities meet the unrestricted release criteria with the confidences stated herein.

Table E-1 V&V of Radiological Results - Area 5, Group 15 Facilities

V&V CRITERIA, RADIOLGICAL SURVEYS		K-H RSP 16.00 Series MARSSIM (NUREG-1575)		
	QUALITY REQUIREMENTS			
	Parameters	Measure	frequency	COMMENTS
ACCURACY	initial calibrations	90%<x<110%	≥1	Multi-point calibration through the measurement range encountered in the field; programmatic records.
	daily source checks	80%<x<120%	≥1/day	Performed daily/within range.
	local area background: Field	typically < 10 dpm	≥ 1/day	All local area backgrounds were within expected ranges (i.e., no elevated anomalies.)
PRECISION	field duplicate measurements for TSA	≥ 5% of real survey points	≥ 10% of reals	N/A
REPRESENTATIVENESS	MARSSIM methodology: Survey Units 120-5-001, 120A-5-002, 120B-5-003, 920-5-004, 920A-5-005, 920B-5-006 and EXT-B-001 (exterior of buildings 120, 120A and 120B).	statistical and biased	NA	Random w/ statistical confidence.
	Survey Maps	NA	NA	Random and biased measurement locations controlled/mapped to ±1m.
	Controlling Documents (Characterization Pkg; RSPs)	qualitative	NA	Refer to the Characterization Package (planning document) for field/sampling procedures (located in Project files); thorough documentation of the planning, sampling/analysis process, and data reduction into formats.
COMPARABILITY	units of measure	dpm/100cm^2	NA	Use of standardized engineering units in the reporting of measurement results.
COMPLETENESS	Plan vs. Actual surveys usable results vs. unusable	>95% >95%	NA	See Table E-3 for details.
SENSITIVITY	detection limits	TSA: ≤50 dpm/100cm^2 RA: ≤10 dpm/100cm^2	all measures	MDAs ≤ 50% $DCGL_w$ per MARSSIM guidelines.

Table E-2 V&V of Beryllium Results - Area 5, Group 15 Facilities

V&V CRITERIA, CHEMICAL ANALYSES		DATA PACKAGE		
BERYLLIUM	Prep: NMAM 7300 METHOD: OSHA ID-125G	LAB ---->	Johns Manville, Littleton, Co.	
QUALITY REQUIREMENTS		RIN ---->	RIN03Z1444	
		Measure	frequency	COMMENTS
ACCURACY	Calibrations Initial	linear calibration	≥1	No qualifications significant enough to change project decisions, i.e., classification of Type 1 facilities confirmed. All results were below associated action levels.
	Continuing	80%<%R<120%	≥1	
	LCS/MS	80%<%R<120%	≥1	
	Blanks - lab & field	<MDL	≥1	
	interference check std (ICP)	NA	NA	
PRECISION	LCSD	80%<%R<120% (RPD<20%)	≥1	
	field duplicate	all results < RL	≥1	
REPRESENTATIVENESS	COC	Qualitative	NA	
	hold times/preservation	Qualitative	NA	
	Controlling Documents (Plans, Procedures, maps, etc.)	Qualitative	NA	
COMPARABILITY	measurement units	ug/100cm^2	NA	
COMPLETENESS	Plan vs. Actual samples usable results vs. unusable	>95% >95%	NA	
SENSITIVITY	detection limits	MDL of 0.012 ug/100cm^2	all measures	

Table E-3 Data Completeness Summary - Area 5, Group 15 Facilities

ANALYTE	Building/Area /Unit	Sample Number Planned (Real & QC)[A]	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Beryllium	Building 120	5 biased (interior)	5 biased (interior)	No contamination found, all results are less than associated action levels	OSHA ID-125G – RIN03Z1444 No results above action level (0.2ug/100cm^2) or investigative level (0.1 ug/100cm^2).
Beryllium	Building 120A	5 biased (interior)	5 biased (interior)	No contamination found, all results are less than associated action levels	OSHA ID-125G – RIN03Z1444 No results above action level (0.2ug/100cm^2) or investigative level (0.1 ug/100cm^2).
Beryllium	Building 120B	5 biased (interior)	5 biased (interior)	No contamination found, all results are less than associated action levels	OSHA ID-125G – RIN03Z1444 No results above action level (0.2ug/100cm^2) or investigative level (0.1 ug/100cm^2).
Beryllium	Building 920	5 biased (interior)	5 biased (interior)	No contamination found, all results are less than associated action levels	OSHA ID-125G – RIN03Z1444 No results above action level (0.2ug/100cm^2) or investigative level (0.1 ug/100cm^2).
Beryllium	Building 920A	5 biased (interior)	5 biased (interior)	No contamination found, all results are less than associated action levels	OSHA ID-125G – RIN03Z1444 No results above action level (0.2ug/100cm^2) or investigative level (0.1 ug/100cm^2).
Beryllium	Building 920B	5 biased (interior)	5 biased (interior)	No contamination found, all results are less than associated action levels	OSHA ID-125G – RIN03Z1444 No results above action level (0.2ug/100cm^2) or investigative level (0.1 ug/100cm^2).

Table E-3 Data Completeness Summary - Area 5, Group 15 Facilities

ANALYTE	Building/Area /Unit	Sample Number Planned (Real & QC)[A]	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Radiological	Survey Area 5 Survey Unit: 120-5-001 Building 120 (interior)	20 α TSA (15 random and 5 biased) and 20 α Smears (15 random and 5 biased) 5 α TSA and 5 α Smears (Equipment) 2 QC TSA 5% scan	20 α TSA (15 random and 5 biased) and 20 α Smears (15 random and 5 biased) 5 α TSA and 5 α Smears (Equipment) 2 QC TSA 5% scan	No contamination at any location; all values below PDS unrestricted release levels	Transuranic and/or Uranium DCGLs as applicable.
Radiological	Survey Area 5 Survey Unit: 120A-5-002 Building 120A (interior)	17 α TSA (15 random and 2 biased) and 17 α Smears (15 random and 2 biased) 5 α TSA and 5 α Smears (Equipment) 2 QC TSA 5% scan	17 α TSA (15 random and 2 biased) and 17 α Smears (15 random and 2 biased) 5 α TSA and 5 α Smears (Equipment) 2 QC TSA 5% scan	No contamination at any location; all values below PDS unrestricted release levels	Transuranic and/or Uranium DCGLs as applicable.

Table E-3 Data Completeness Summary - Area 5, Group 15 Facilities

ANALYTE	Building/Area /Unit	Sample Number Planned (Real & QC)[A]	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Radiological	Survey Area 5 Survey Unit: 120B-5-003 Building 120B (interior)	20 α TSA (15 random and 5 biased) and 20 α Smears (15 random and 5 biased) 5 α TSA and 5 α Smears (Equipment) 2 QC TSA 5% scan	20 α TSA (15 random and 5 biased) and 20 α Smears (15 random and 5 biased) 5 α TSA and 5 α Smears (Equipment) 2 QC TSA 5% scan	No contamination at any location; all values below PDS unrestricted release levels	Transuranic and/or Uranium DCGLs as applicable.
Radiological	Survey Area 5 Survey Unit: 920-5-004 Building 920 (interior and exterior)	20 α TSA (15 random and 5 biased) and 20 α Smears (15 random and 5 biased) 5 α TSA and 5 α Smears (Equipment) 2 QC TSA 5% scan	20 α TSA (15 random and 5 biased) and 20 α Smears (15 random and 5 biased) 5 α TSA and 5 α Smears (Equipment) 2 QC TSA 5% scan	No contamination at any location; all values below PDS unrestricted release levels	Transuranic and/or Uranium DCGLs as applicable.

Table E-3 Data Completeness Summary - Area 5, Group 15 Facilities

ANALYTE	Building/Area /Unit	Sample Number Planned (Real & QC)[A]	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	*Comments* (RIN, Analytical Method, Qualifications, etc.)
Radiological	Survey Area 5 Survey Unit: 920A-5-005 Building 920A (interior and exterior)	17 α TSA (15 random and 2 biased) and 17 α Smears (15 random and 2 biased) 5 α TSA and 5 α Smears (Equipment) 2 QC TSA 5% scan	17 α TSA (15 random and 2 biased) and 17 α Smears (15 random and 2 biased) 5 α TSA and 5 α Smears (Equipment) 2 QC TSA 5% scan	No contamination at any location; all values below PDS unrestricted release levels	Transuranic and/or Uranium DCGLs as applicable.
Radiological	Survey Area 5 Survey Unit: 920B-5-006 Building 920B (interior and exterior)	20 α TSA (15 random and 5 biased) and 20 α Smears (15 random and 5 biased) 5 α TSA and 5 α Smears (Equipment) 2 QC TSA 5% scan	20 α TSA (15 random and 5 biased) and 20 α Smears (15 random and 5 biased) 5 α TSA and 5 α Smears (Equipment) 2 QC TSA 5% scan	No contamination at any location; all values below PDS unrestricted release levels	Transuranic and/or Uranium DCGLs as applicable.

[A] Number of asbestos samples required is an estimate only, final number of samples is at the discretion of the IH.